

UNIVERSITY OF CALIFORNIA
MUSEUM OF VERTEBRATE ZOOLOGY

MURRAY, K.
1948 - 1949

1- Baja California

April 6 - July 19, 1948

Catalogue Nos. 1-592

Journal

Species Accounts

Birds, Mammals, Reptiles

2- Humboldt Co., California

August 8 - September 11, 1949

Catalogue nos.* 608-835

Journal

Species Accounts

Birds, Mammals, Amphibians-Reptiles

* Cat. nos. 593-607 not accounted for.

Digitized by the Internet Archive
in 2017 with funding from
CLIR

<https://archive.org/details/fieldnotesv150200murr>

MURRAY, K.

BAJA CALIFORNIA

APRIL 6 - JULY 19, 1948

CATALOGUE NOS. 1 - 592

JOURNAL

SPECIES ACCOUNTS

BIRDS

MAMMAL

REPTILES

CATALOGUE

Murray
1948

1

Catalog

Apr 6 E side Cocopah Mts, 21 mi. SSE Mexicali, Baja Calif.

1. ♂ *Perognathus* ^{formosus} ~~penicillatus~~ 198-124-13-8^m-7^c 16.6 gm
2. ♂ " *spinatus* 171-100-22-9^m-6^c 11.9 gm
3. ♂ " " 151-88-19-8^m-5^c 9.4 gm.
4. ♀ no emb. *Peromyscus crinitus* 153-92-18-18^m-15^c 8.3 gm

All caught in rocky, sandy wash among creosote and ironwood.

Apr 8 Point San Felipe, 50± ft., Baja California

- 5 ♀ *Cnemidophorus tessellatus tessellatus* 302-82 SV
Wt 14.7 Shot among small bushes in sandy wash.
- 6 *Crotalus cerastes laterorepens*
Shot from under rocks on talus slope.

Apr 9. Same location

- 7 ♀ *Peromyscus crinitus* 179-107-20-18^m-16^c 13.4
- 8 ♀ ^{no} emb " " 173-104-20-18^m-16^c 12
- 9 ♀ ^{no} emb " " 170-95-20-19^m-17^c 12.3
- 10 ♂ " " 177-108-19-19^m-17^c 12
- 11 ♂ " " 179-108-19-20^m-17^c 12.7
- 12 ♀ *Perognathus spinatus* 175-105-19-7^m-4^c 8.9
- 13 ♀ ^{no} emb " ^{formosus} ~~penicillatus~~ 175-98-23-8^m-5^c 13.3
- 14 ♂ *Gambelia wislizenii wislizenii* 74 SV 13.1 gm-

Apr 10 Same location

Caught by Benson

- 15 *Anniella pulchra*? Found dead and damaged in the sand under our dinner table
- 16 ♂ *Peromyscus crinitus* 179-98-19-18^m-15^c 12.9
- 17 ♂ ^{no emb.} " " 173-100-18-18^m-16^c 10.7
- 18 ♀ *Perognathus formosus* 190-115-24-9^m-6^c 16.6
- 19 ♀ ^{no} emb. " " 190-112-25-9^m-6^c 17.1

CatalogApr 10 Punta San Felipe, 50± ft., Baja California

- 20 ♀ ^{no}emb. *Perognathus spinatus* 164-98-20-7ⁿ-5° 9.1
 21 ♂ " " 152-94-21-8ⁿ-5° 11.0
 22 ♀ ^{no}emb. " " 150+-84+-20-7ⁿ-4° 11.7
 23 ♀ ^{no}emb. " formosus 178-101-23-9ⁿ-6° 15.3
 24 ♂ " " 200-118-24-9ⁿ-6° 17.3
 25 ♂ *Peromyscus crinitus* 188-100-18-19ⁿ-16° 12.0

Apr 11 Same location.

- 26 ♀ ^{imm.}*Dipsosaurus dorsalis dorsalis* 253-82sv
 Wt. 16.7 Shot beside a creosote bush in sandy
 and rocky wash.
 27 ♀ *Uta stansburiana* 38sv Wt. 1.8 Shot under
 encelia bush in flat terrain covered with
 small rock

Apr 12 Same location

- 28 ♂ *Tadarida mexicana* 87-30-10-16ⁿ-14° 7.9

Apr 13 Shot flying over beach at dusk.
9 mi W Punta San Felipe, 700± ft., Baja California

- 29 ♀ ^{no}emb. *Peromyscus crinitus* 177-106-19-19-16° 10.7
 30 ♂ " " 186-110-20-20ⁿ-16° 13.5
 31 ♀ ^{no}emb. *Perognathus spinatus* 88+-21+-21-7ⁿ-4° 9.4
 32 ♀ ^{no}emb. " " 167-103-22-7ⁿ-5° 9.3
 33 ♀ ^{no}emb. " " 123+-50+-21-7ⁿ-4° 11.0

Apr 13 9 mi W Punta San Felipe, 700± ft., Baja California.

- 34 ♂ im. *Callisaurus draconoides* 52sv 3.19m

Apr 14 El Mayor, Rio Hardy, 30± ft., Baja Calif.

- 35 ♂ *Peromyscus crinitus* 171-106-18-18ⁿ-14° 10.7
 36 ♂ " *eremicus* 178-96-21-19ⁿ-17° 22.3

Apr 15 Cerro Centinela, 300± ft., 13 mi WSW Mexicali, Baja Calif.

- 37 ♂ *Perognathus formosus* 198-114-27-9ⁿ-6° 19.0
 Live trapped in sandy wash with creosote and ironwood

CatalogApr. 15 Cerro Centinela, 300± ft., 13 mi WSW Mexicali, Baja Calif.38 ♂ *Perognathus formosus* 173⁺-96⁺-24-9ⁿ-5^c 14.439 ♂ " *spinatus* 183-104-21-9ⁿ-5^c 13.640 ♂ *Peromyscus crinitus* 144⁺-80⁺-19-18ⁿ-15^c 19.0

Live trapped in rocky draw

41 ♂ *Dipodomys merriami* 238-143-38-14ⁿ-11^c 34.142 ♂ " " 254-156-37-13ⁿ-10^c 34.943 ♀ ^{no}emb. " 241-150-37-12ⁿ-9^c 30.3Live trapped in sandy wash with creosote
and ironwood.Apr. 16 Same location44 ♂ *Perognathus baileyi* 195-118-26-9ⁿ-7^c 17.645 ♂ Test 4mm " 189-112-24-9ⁿ-6^c 20.546 ♂ " " " 202-127-26-18ⁿ-7^c 18.447 ♀ no emb. " *spinatus* 173-105-20-8ⁿ-5^c 9.648 ♂ test. 7mm. " 175-104-19-8ⁿ-5^c 11.449 ♂ " *baileyi* 200-114-25-9ⁿ-7^c 20.850 ♀ no emb " 200-112-25-10ⁿ-7^c 21.2Apr. 18 Cerro Prieto, 30± ft., 20 mi SSW Mexicali, Baja Calif.51 ♂ *Neotoma lepida* 270-124-28-29ⁿ-25^c 20.652 ♂ *Peromyscus crinitus* 166-98-19-19ⁿ-16^c 10.553 ♀ ^{no}emb. " 176-105-19-19ⁿ-17^c 15.5Apr. 20 Alakea, 4400 ft., Baja California54 *Uta stansburiana hesperis* 123 46 sv 2.7Apr. 21 Agua Hedionda 32° 30' N 116° 16' W, Baja California55 ♀ ^{3 emb. 22 mm} *Dipodomys agilis* 283-173-44-17ⁿ-13^c 80.856 ♂ " 280-174-42-17ⁿ-13^c 73.157 ♂ " 297-175-44-18ⁿ-15^c 78.8

Murray
1948

4

Catalog

Apr 21 Agua Hedionda, 32° 30' N 116° 16' W, Baja California

- 58 ♀ ^{2 emb. 12mm.} *Peromyscus californicus* 234-131-26-22°-19° 37.0
59 ♂ ^{test 10mm.} " *maniculatus* 159-74-21-20°-19° 25.3
60 ♀ ^{no} *emb.* " " 157-75-20-17°-15° 26.5
61 ♂ " " " 153-77-22-19°-17° 20.1

Apr 24 San Fernando Mission, 1500 ft., Baja California

- 62 ♀ ^{no} *emb.* *Peromyscus maniculatus* 148-71-21-20°-16° 17.1
63 ♂ " " " 163-75-21-19°-16° 21.3
64 ♀ ^{no} *emb.* " " 173-86-22-20°-17° 21.4
65 *Cnemidophorus hyperythrus* 212 158 sv 3.8

Apr 25/26 mi S by road El Marmol, 2200 ft., Baja California

- 66 ♂ *Uta stansburiana* 3.2
67 ♀ ^{no} *emb.* *Perognathus fallax* 185-106-23-9°-6° 17.4
68 ♂ *Peromyscus eremicus* 177-97-20-20°-17° 15.3

Apr 25 Rancho Santa Inez

- 69 ♀ *Cnemidophorus tessellatus* 276 90.1 sv 23.8
Baja Calif.

Apr 26 Mina La Fortuna, 2350 ft., 2 mi N Laguna Seca Chapala

- 70 ♀ ^{1 emb} *Choronycteris mexicana* 86-11-12-18°-11° 24.6
wing-spread 317. Taken in mine shaft, hung up.
71 ♀ ^{2 emb} *Antrozous* 106-45-12-30°-27° 16.8
Wing spread 336. Also in mine shaft.
72 ♀ ^{no} *emb.* *Antrozous* 109-44-12-30°-26° 14.9
Wing spread 321. Same as above.

Apr 28 30 mi SE Mesquite, 600± ft., Baja California

- 73 ♀ ^{no} *emb.* *Dipodomys merriami* 223-133-37-15°-12° 36.5
74 ♀ ^{no} *emb.* " " 238-147-37-15°-12° 35.9
75 ♂ " " 240-146-37-15°-11° 32.5
76 ♀ ^{no} *emb.* *Perognathus baileyi* 189-109-25-9°-7° 19.6
77 *Callisaurus draconoides* 194. 84 sv. 18.5

Murray
1948

5

Catalog

Apr 28 30 mi SE Mesquite, 400± ft., Baja California

78	<i>Cnemidophorus tessellatus</i>	392	100 sv.	36.0
79	<i>Lambelia wislizenii</i>	354	104 sv	37.7

Apr 29 El Arco Mine, Baja California

80	<i>Callisaurus draconoides</i>	148	62 sv	5.7
81	<i>Uta stansburiana</i>	49 sv		2.8

Apr 29 20± mi SSE El Arco Mine, Baja California

82	<i>Phrynosoma coronatum</i>	126	82 sv	32.3
83	<i>Lambelia wislizenii</i>	357	410 sv	26.8

Apr. 30 San Ignacio, 500 ft., Baja California

84	♂	<i>Macrotus californicus</i>	89-36-13-32-27	ex. 310	11.7
85	♂	<i>Tadarida mexicana</i>	94-35-10-19-13	ex 300	8.9
86	♂	"	"	87-29-10-19-15	ex 293 9.1
87	♂	"	"	95-34-10-18-15	ex 298 10.0
88	♀ ^{no} emb	"	"	88-31-10-18-14	ex 290 8.5
89	♀	"	"	95-35-10-18-14	ex 299 9.0
90	♀	"	"	92-32-10-18-14	ex 305 9.3
91	♀	"	"	91-34-10-18-13	ex 295 10.0
92	♀	"	"	93-32-10-19-14	ex 300 10.0
93	♀	"	"	95-31-10-18-14	ex 289 10.3

May 2 Mulegé, 25 ft., Baja California

94	♂	<i>Tadarida mexicana</i>	90-32-10-18-14	ex 298	10.0
95	♀ ^{1 emb} 6 mm.	"	"	91-32-10-17-12	ex 299 10.4
96	♀ ^{no emb}	"	"	95-33-10-18-13	ex 296 9.7
97	♀ ^{1 emb} 5 mm	"	"	97-33-10-17-13	ex 299 11.0
98	♀ ^{1 emb} 5 mm	"	"	90-30-9-17-13	ex 295 9.8

Apr 30 San Ignacio, 500 ft., Baja California

Caught by Dr. Benson (Put up May 2)	99	♂	<i>Macrotus californicus</i>	89-30-12-32-26	ex 310	9.6
--	----	---	------------------------------	----------------	--------	-----

Murray
1948

6

Catalog

May 2 Mulegé, 25 ft., Baja California

100	♂	<i>Myotis yumanensis</i>	73-30-9-13 ⁿ -10 ^e ex 210	3.4
101	♀ ^{no} emb	"	68-29-9-13 ⁿ -10 ^e ex 214	3.4
102	♀	"	71-31-9-13 ⁿ -10 ^e ex 207	3.8
103	♀	"	72-32-9-13 ⁿ -11 ^e ex 220	3.9
104	♀	"	73-32-9-13 ⁿ -10 ^e ex 210	4.3

May 2 Same location

skull only 105-110

Killed & Prepared	105	♀ ^{no} emb	<i>Myotis yumanensis</i>	76-34-9-13 ⁿ -11 ^e ex 206 FA 31	3.0
"	106	♀	"	76-36-9-12 ⁿ -10 ^e ex 214 FA 32	3.1
"	107	♀	"	74-32-9-13 ⁿ -11 ^e ex 213 FA 32	3.1
"	108	♀	"	74-35-9-13 ⁿ -11 ^e ex 210 FA 31	3.1
"	109	♀	"	73-31-9-13 ⁿ -11 ^e ex 211 FA 31	3.5
"	110	♀	"	76-33-9-13 ⁿ -11 ^e ex 217 FA 32	4.4

May 3 111 ♂ *Callisaurus draconoides* 177 72 sv 10.3

May 5 Bahía Concepción, 13 mi SE Mulegé, 50 ft., Baja Calif.

112	♂	<i>Neotoma lepida</i>	219 ⁺ -79 ⁺ -32-33 ⁿ -28 ^e	112.8
113	♂	"	298-150-33-32 ⁿ -27 ^e	122.2
114	♂	<i>Perognathus spinatus</i>	185-110-23-9 ⁿ -5 ^e	17.5
115	♀	"	103 ⁺ -32 ⁺ -22-8 ⁿ -6 ^e	12.8
116	♂	"	169-98-22-9 ⁿ -5 ^e	13.0
117	♀	"	173-106-22-8 ⁿ -5 ^e	11.5
skull only 118	♀	"	161-91-20-	9.9
" 119	♀	"	1	
120	♂	<i>Peromyscus eremicus</i>	77-106-18-19 ⁿ -17 ^e	13.4
121	♂	"	183-107-18-18 ⁿ -15 ^e	16.8
122	♂	"	143 ⁺ -65 ⁺ -18-19 ⁿ -17 ^e	16.4
123	♂ ^{test} 9mm	"	177-103-19-19 ⁿ -16 ^e	14.4
124	♀	"	179-100-19-19 ⁿ -16 ^e	16.4

Murray
1948

7

Catalog

May 4 4 mi S Mulegé, 100± ft., Baja California

Prepared May 5	125 ♀	<i>Mormoops megalophylla</i>	86-23-11-12 ⁿ -5 ^c	12.7
" "	126 ♀	"	88-25-11-12 ⁿ -6 ^c	14.9
Prepared May 6	127 ♀	<i>Macrotus californicus</i>	82-35-12-33 ⁿ -28 ⁿ ex 300	19.5

May 6 Bahía Concepción, 50± ft., 13 mi SE Mulegé, Baja California

128 ♀ ^{amb}	<i>Perognathus spinatus</i>	187-109-22-9 ⁿ -5 ^c	14.1
129 ♀ "	"	190-113-22-9 ⁿ -5 ^c	11.8
130 ♀ "	"	186-102-21-8 ⁿ -5 ^c	12.7
131 ♂	"	183-106-21-9 ⁿ -5 ^c	15.6
132 ♂	"	184-106-22-9 ⁿ -6 ^c	15.9
133 ♂	"	182-105-22-9 ⁿ -5 ^c	13.6
134 ♂	"	183-102-22-9 ⁿ -6 ^c	18.0
135 ♀	"	175-100-22-9 ⁿ -5 ^c	12.2
136 ♀ ^{2 amb} 7 mm.	<i>Peromyscus eremicus</i>	175-114-20-21 ⁿ -18 ^c	16.4
137 ♀	"	175-98-19-18 ⁿ -15 ^c	15.4
138 ♂	"	162-91-19-18 ⁿ -16 ^c	12.6
139 ♂	"	183-108-19-19 ⁿ -16 ^c	14.7

May 7 Same location, sea level.

140 ♂	<i>Perognathus spinatus</i>	182-105-21-9 ⁿ -5 ^c	12.9
141 ♂	"	180-104-21-9 ⁿ -5 ^c	14.5
142 ♂	"	115 ⁿ -40 ⁿ -21-9 ⁿ -5 ^c	12.1
143 ♀	"	158-91-21-8 ⁿ -5 ^c	10.4

May 7 Rancho Cadejé, SW end Bahía Concepción, Baja Calif.

144 ♂	<i>Pipistrellus hesperus</i>	62-28-5-9 ⁿ -8 ^c ex 183	1.7
-------	------------------------------	---	-----

May 8 Same location

145 ♀	<i>Perognathus spinatus</i>	121 ⁿ -50 ⁿ -21-9 ⁿ -6 ^c	15.1
-------	-----------------------------	--	------

May 10 San José de Comondú, ⁷⁰⁰1000± ft., Baja California

146 ♂	<i>Perognathus spinatus</i>	182-105-21-9 ⁿ -6 ^c	18.3
-------	-----------------------------	---	------

Murray
1948

8

Catalog

May 10 San Jose de Comondú, 1000± ft., Baja California

147 ♂ *Macrotus californicus* 93-38-12-33-28[°] ex 332[°] 12.7

May 11 Pozo Grande, 25°46'N, 112°02'W, Baja California

148 ♀ *Myotis yumanensis* 75-31-9-14[°]-11[°] ex 205 3.8

149 ♀ " " 74-30-9-14[°]-10[°] ex 213 3.6

150 ♂ " " 79-36-9-14[°]-11[°] ex 219 3.8

May 12 24.3 mi SE El Refugio, 100± ft., 24°33'N, 111°35'W Baja Calif.

151 ♂ *Dipodomys merriami* 248-148-36-14[°]-11[°] 34.9

152 ♂ " " 227-142-37-14[°]-11[°] 29.2

153 ♂ " " 263-164-36-14[°]-11[°] 43.5

154 ♀ " " 255-157-37-14[°]-10[°] 39.3

155 ♂ *Dipodomys agilis* 275-167-41-16[°]-12[°] 53.3

156 ♀ " " 272-163-42-17[°]-13[°] 62.5

May 12 Santa Ana, Arroyo de los Viejos, 25± ft., 24°03'N, 110°58'W, Baja Calif. ex 220

157 ♂ *Myotis californicus* 81-42-6-14[°]-11[°] 3.3

May 14 4 mi N La Paz, S.L., Baja California

158 ♀ *Uta stansburiana* 86 42sv 2.6

159 ♂ *Uta* 124 44sv 3.1

160 ♀ *Cnemidophorus hyperythrus*

May 15 Same location, 30± ft.

161 ♀ ^{no emb} lact. *Neotoma lepida* 343-174-34-32[°]-28[°] 167.4

162 ♀ ^{imm. 2 emb} 4mm *Peromyscus eremicus* 162-102-18-18[°]-15[°] 10.7

163 ♀ ^{imm. 1 emb} 10mm " " 158-89-18-18[°]-15[°] 11.8

Col. by Dr. Benner 164 ♂ *Perognathus spinatus* 188-113-23-10[°]-6[°] 16.6

" " 165 ♂ " " 195-115-23-10[°]-7[°] 18.0

166 ♀ *Cnemidophorus hyperythrus* 234 60sv 6.5

167 *Uta* 106 38sv 2.0

Murray
1948

9

Catalog

May 16 4 mi N La Paz, 30± ft., Baja California

168 ♂ *Perognathus spinatus* 98⁺-20⁺-23-9⁻-6⁻ 15.6

May 16 Iruinfo, 1700 ft., Baja California

169 *Bufo punctatus*

170 " "

May 17 Same location

171 ♀ ^{no}emb. *Perognathus baileyi* 185-106-24-10⁺-7⁻ 21.3

172 ♀ ^{no}emb. " " 192-111-25-10⁺-6⁻ 17.5

173 ♀ " *Perognathus spinatus* 136⁺-52⁺-23-10⁺-7⁻ 21.1

174 ♀ " " " 209-124-24-10⁺-7⁻ 20.5

175 ♂ " " " 165-93-22-10⁺-7⁻ 13.4

176 ♂ " " " 178-108-22-10⁺-7⁻ 18.7

May 16 Same location

177 *Bufo punctatus*

178 ♀ ^{no}emb. *Tadarida mexicana* 92-34-9-18⁺-15⁻ 8.4

May 17 Same location

179 ♀ ^{no}emb. *Citellus leucurus* 233-82-39-13⁺-6⁻ 10.0

180 ♂ *Cnemidophorus hyperythrus* 198 65sv 5.2

181 ♀ ^{no}emb. *Citellus leucurus* 235-84-34-13⁺-6⁻ 113.0

182 ♀ ^{no}emb. *Pipistrellus hesperus* 67-27-6-12⁺-10⁻ ex 195 2.9

183 ♀ ^{no}emb. " " 66-28-6-12⁺-10⁻ ex 194 3.2

184 ♂ *Eptesicus fuscus* 97-38-11-16⁺ 12⁻ ex 288 8.5

185 ♀ ^{no}emb. " " 94-42-11-15⁺ 11⁻ ex 283 7.8

May 18 Same location

186 ♂ *Perognathus spinatus* 192-110-23-9⁺-6⁻ 18.2

187 ♀ ^{no}emb. " " 180-102-23-9⁺-6⁻ 15.9

188 ♀ ^{2 emb}
^{5 mm} " " 180-102-23-10⁺-7⁻ 16.7

"

"



Murray
1948

18

Catalog

May 18 Triunfo, 1700 ft., Baja California

189 ♀	<i>Dipsosaurus dorsalis</i>	340	117 s.v.	44.2
190 ♀	<i>Cnemidophorus tessellatus</i>	447	131 s.v.	61.6
191 ♂	<i>Oasypterus ega</i>	103-49-10-17 ⁿ -9 ^c ex. 324 9.7		

May 19 Same location

192 ♂	<i>Peromyscus eremicus</i>	185-114-20-19 ⁿ -16 ^c	14.7
193 ♂	<i>Perognathus spinatus</i>	177-104-21-10 ⁿ -7 ^c	16.3
194 ♂	" "	188-104-21-10 ⁿ -7 ^c	18.3
195 ♂	" "	131 ⁿ -50 ⁿ -23-9 ⁿ -6 ^c	16.3
196 ♂	" "	202-111-25-10 ⁿ -7 ^c	20.5
197 ♂	<i>Urosaurus microscutatus</i>	101 44 sv	2.0
198 ♀ ^{no} emb	<i>Eptesicus fuscus</i>	92-38-10-15 ⁿ -13 ^c ex 298	8.3
199 ♀ ^{no} emb	" "	103-45-11-17 ⁿ -13 ^c ex 298	10.0

May 20 Same location

200 ♂	<i>Neotoma lepida</i>	291-148-34-31 ⁿ -26 ^c	108.2
201 ♀ ^{no} emb.	<i>Perognathus spinatus</i>	182-99-23-10 ⁿ -6 ^c	17.1
202 ♂	" "	191-108-24-10 ⁿ -7 ^c	17.8
203 ♂	<i>Peromyscus eremicus</i>	192-113-20-20 ⁿ -17 ^c	16.0

May 19 Same location

baln. 204 ♂	<i>Tadarida mexicana</i>	8.1			
form 205 ♂	"	"	8.7		
form 206 ♂	"	"	7.5		
form 207 ♂	"	"	8.7		
form 208 ♂	"	"	7.8		
form 209 ♂	"	"	7.4		
form 210 ♂	"	"	8.0		
form 211 ♂	"	"	7.5		
form 212 ♂	"	"	8.1		

Murray
1948

11

Catalog

May 19 Triunfo, 1700ft., Baja California

form	♂	<i>Tadarida mexicana</i>	7.4
form	♀	" "	8.3
form	♀	" "	8.8
form	♀	" "	8.6
form	♀	" "	8.6
form	♀	" "	8.4
form	♀	" "	9.1
form	♂	<i>Eptesicus fuscus</i>	8.2
form	♀	" "	9.2

May 20 1 mi E San Antonio, Baja California

222	♀	no emb. <i>Leptonycteris</i>	79-0-15-16 ⁿ -11 ^c ex. 372	23.7
223	♀	no emb. "	78-0-16-16 ⁿ -11 ^c ex 368	20.0
224	♂	"	83-0-16-17 ⁿ -11 ^c ex. 381	24.5
225	♂	"	74-0-15-16 ⁿ -10 ^c ex 370	19.8
226	♀	no emb. "	69-0-14-16 ⁿ -10 ^c ex 318	13.8
227	♂	<i>Macrotus californicus</i>	88-35-13-32 ⁿ -25 ^c ex 323	11.1
228	♂	" "	89-34-13-34 ⁿ -28 ^c ex 325	11.7
229	♂	" "	84-33-13-33 ⁿ -27 ^c ex 321	11.2
230	♂	" "	90-33-13-34 ⁿ -27 ^c ex. 323	11.4
231	♂	" "	91-36-13-33 ⁿ -27 ^c ex. —	11.5

May 21 Buena Vista, 25±ft., 23° 38'N, 109° 41'W, Baja Calif.

232	♀	no emb. <i>Myotis velifer</i>	90-42-10-16 ⁿ -12 ^c ex. 263	6.7
233	♂	<i>Macrotus californicus</i>	84-33-12-33 ⁿ -27 ^c ex 305	10.7

May 22 Cerro Agua Amarca, 4 mi SE Buena Vista, 23° 36'N, 109° 37'W, Baja Calif

skull only	emb	234	♀	16 mm	<i>Macrotus californicus</i>	F.A. 50	12.5
"	emb	235	♀	19 mm	"	F.A. 49	11.6
"	emb	236	♀	20 mm	"	FA 49	13.6

Murray
1948

12

Catalog

May 22 Cerro Agua Amarga, 4 mi SE Buena Vista, 23° 36' N, 109° 37' W, Baja Calif.

skull only	emb				
237	♀	15mm	Macrotus californicus	F.A. 48	12.6
"	238	♀	19mm	"	F.A. 51 13.6
"	239	♀	20mm	"	F.A. 50 12.3
"	240	♀	19mm	"	F.A. 51 12.9
"	241	♀	20	"	F.A. 51 13.2
"	242	♀	16mm	"	F.A. 50 12.7
"	243	♀	17mm	"	F.A. 50 12.2
"	244	♀	17mm	"	F.A. 49 11.5
"	245	♀	15mm	"	F.A. 49 12.3
"	246	♂		"	F.A. 50 13.0
"	247	♂		"	F.A. 50 11.8
"	248	♂		"	F.A. 48 12.3

May 23 Buena Vista, 25± ft., 23° 38' N, 109° 41' W, Baja Calif.

249	♂	Perognathus spinatus	130 ⁺ -51 ⁺ -24-11 ⁿ -7 ^c	18.6
250	♂	"	188-105-23-11 ⁿ -7 ^c	19.1
251	♂	"	199-117-24-11 ⁿ -7 ^c	18.7
252	♂	"	195-117-24-11 ⁿ -7 ^c	16.3
253	♀	2 emb. 11mm Citellus leucurus	222-75-35-14 ⁿ -6 ^c	100.2

May 23 Same location

254	♀	no emb Eptesicus fuscus	100-42-10-16 ⁿ -13 ^c ex 289	10.0
255	♀	no emb "	103-43-10-16 ⁿ -12 ^c 305	9.7

May 24 Las Cuevas

256	♀	Natalus mexicanus	90-47-8-15 ⁿ -11 ^c ex 263	5.6
257	♀	"	92-52-9-16 ⁿ -11 ^c ex 260	5.6
258	♀	"	95-50-9-16 ⁿ -11 ^c ex 265	5.5
259	♀	"	90-49-9-16 ⁿ -11 ^c ex 260	4.2
260	♀	"	90-47-9-15 ⁿ -10 ^c ex 250	4.2

CatalogMay 24 Las Cuevas, 23° 34' N, 109° 39' W, Baja Calif.

261	♀	<i>Natalus mexicanus</i>	96-53-10-16 ⁿ -11 ^c ex. 266	6.4
262	♂	"	90-50-9-16 ⁿ -11 ^c ex 260	5.5
263	♂	"	92-51-9-15 ⁿ -10 ^c ex 245	4.4
264	♂	"	90-47-9-15 ⁿ -11 ^c ex. 246	5.0 4.7
265	♂	"	93-50-9-16 ⁿ -10 ^c ex. 272	5.3

May 24 El Carrizalito, 1400ft, 5 mi N Santiago, Baja Calif.

266	♀ ^{no} emb.	<i>Nasypterus ega</i>	113-53-10-17 ⁿ -10 ^c ex. 329	11.3
267	♀	<i>Eptesicus fuscus</i>	97-37-10-18 ⁿ -12 ^c ex 299	9.5
268	♂	"	105-46-10-17 ⁿ -13 ^c ex 294	10.5

May 24 Las Cuevas, 23° 34' N, 109° 39' W, Baja California

269	♂	<i>Myotis velifer</i>	84-37-9-15 ⁿ -12 ^c ex 253	4.3
270	♂	"	84-38-10-16 ⁿ -12 ^c ex. 254	4.6
271	♂	"	89-41-10-16 ⁿ -12 ^c ex 258	4.4
272	♂	"	85-39-10-16 ⁿ -11 ^c ex. 257	4.9
273	♂	"	85-39-10-15 ⁿ -12 ^c ex 253	4.9

May 24 El Carrizalito, 1400ft, 5 mi N Santiago, Baja Calif.

274	♂	<i>Antrozous minor</i>	98-40-12-27 ⁿ -22 ^c ex 330	14.1
275	♂	"	98-40-12-29 ⁿ -23 ^c ex. 335	14.0
276	♀	"	103-42-13-29 ⁿ -23 ^c ex —	20.9

May 24 Las Cuevas, 23° 34' N, 109° 39' W, Baja California

Skull	277	♂	<i>Myotis velifer</i>	F.A. 39	4.3
"	278	♂	"	F.A. 40	4.4
"	279	♂	"	F.A. 38	4.4
"	280	♂	"	F.A. 37	4.5
"	281	♂	"	F.A. 38	4.5
"	282	♂	"	F.A. 37	4.6
"	283	♂	"	F.A. 39	4.6

Catalog

May 24 Las Cruces 23° 34' N, 109° 39' W, Baja California

Skull only	284	♂	<i>Myotis velifer</i>	F.A. 39	4.8
"	285	♂	"	F.A. 40	4.9

May 25 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.

286	♀	no emb ut. enlarged	<i>Myotis volans</i>	91-46-9-13 ⁿ -9 ^c ex. 255	4.7
287	♀		<i>Lasiurus borealis</i>	103-50-9-13 ⁿ -12 ^c ex. 294	8.3
288	♀		<i>Eptesicus fuscus</i>	96-42-10-17 ⁿ -12 ^c ex. 297	8.8
289	♂		<i>Myotis californicus</i>	77-40-7-14 ⁿ -11 ^c ex 216	2.8
290	♂		"	83-40-7-14 ⁿ -11 ^c ex 215	3.3
291	♀	1 emb 9 mm	"	77-38-8-14 ⁿ -11 ^c ex. 227	3.4
292	♀		"	82-39-8-14 ⁿ -11 ^c ex. —	3.6
293	♀	1 emb 14 mm	"	84-39-8-14 ⁿ -11 ^c ex —	3.6
294	♀	2 emb 11 mm	<i>Pipistrellus hesperus</i>	70-31-7-12 ⁿ -10 ^c ex 201	3.0
295	♀	2 emb 11 mm	"	70-30-7-12 ⁿ -10 ^c ex 196	3.5
296	♀		"	71-30-7-12 ⁿ -10 ^c ex. 200	3.3
297	♀		"	70-30-7-12 ⁿ -10 ^c ex 200	3.3
298	♀		"	68-28-6-12 ⁿ -9 ^c ex 197	3.3
299	♀		"	71-30-7-13 ⁿ -10 ^c ex. 202	3.5
300	♀		"	72-29-7-12 ⁿ -9 ^c ex. 202	3.7
301	♂		<i>Antrozous minor</i>	114-47-13-30 ⁿ -25 ^c ex. 340	6.3
302	♂		"	110-45-13-29 ⁿ -25 ^c ex. 343	6.4

May 26 Same location

Skull only	303	♀	<i>Pipistrellus hesperus</i>	67-27-6-12 ⁿ -10 ^c ex —	3.8
	304	♀	1 emb 11 mm <i>Myotis californicus</i>	84-43-7-14 ⁿ -11 ^c ex 235	4.1

May 27 Same location

	305	♀	<i>Corynorhinus rafinesquii</i>	95-51-10-35 ⁿ -29 ^c ex. 275	7.5
	306	♀	<i>Myotis californicus</i>	75-36-7-14 ⁿ -10 ^c ex 215	3.2
Skull only	307	♂	<i>Antrozous minor</i>	108-47-13-28 ⁿ -23 ^c ex 338	5.5

Murray
1948

15

Catalog

May 27 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.

308 ♂	skel. only	Antrozous minor	107-43-13-29 ⁿ -26 ^e ex. 339	15.8
309 ♂	skel. only	"	115-48-13-27 ⁿ -23 ^e ex. 343	8.3
310 ♀	1 emb 22 mm	"	109-45-13-28 ⁿ -24 ^e ex. 335	6.2
311 ♀	2 emb 22 mm	"	109-45-13-29 ⁿ -25 ^e ex. 357	22.3

May 28 Same location

312 ♂		Eptesicus fuscus	98-42-10-16 ⁿ -11 ^e ex. 295	8.1
313 ♀	1 emb 9 mm	Myotis californicus	75-37-8-14 ⁿ -12 ^e ex. 228	3.5
314 ♀	no emb	Myotis velifer	26-40-10-16 ⁿ -12 ^e ex. 267	5.7
315 ♀	2 emb 11 mm	Pipistrellus hesperus	70-31-6-12 ⁿ -10 ^e ex. —	3.5

May 29 El Chorro, 800± ft., 2 mi W Agua Caliente, (Cape District)

316 ♂		Pipistrellus hesperus	66-27-6-12 ⁿ -10 ^e ex. 187	2.6
317 ♂		Dasypterus ega	112-52-10-16 ⁿ -9 ^e ex. 335	11.5

May 30 Same location

318 ♂		Cnemidophorus tesselatus	368 100 sv	32.5
319 ♂		"	413 119 sv	46.5
320 ♂		Callisaurus draconoides	144 62 sv	7.0
321 ♂		Uta	129 44 sv	2.6

May 30 Same location

322 ♀	no emb	Tadarida femorosacca	99-38-10-19 ⁿ -15 ^e ex. 335	8.6
323 ♀	no emb	"	101-40-11-20 ⁿ -15 ^e ex. —	10.0
324 ♂		Dasypterus ega	113-49-10-16 ⁿ -9 ^e ex. —	10.6
325 ♂		"	111-48-10-15 ⁿ -10 ^e ex. —	11.1
326 ♀	2 emb 12 mm	"	128-64-11-17 ⁿ -10 ^e ex. —	15.1

May 31 Santa Anita, 250± ft., (Cape District) Baja California

327 ♀	no emb	Dasypterus ega	114-50-11-16 ⁿ -9 ^e ex. 350	12.6
328 ♀	no emb	"	123-57-11-16 ⁿ -9 ^e ex. —	12.1
329 ♀	no emb	"	120-55-10-16 ⁿ -9 ^e ex. 343	13.0

Murray
1948

16

Catalog

May 31 Santa Anita, 250±ft., (Cape District), Baja Calif.

330 ♀ ^{1emb} 8mm *Myotis velifer* 86-37-10-15"-12" ex 258 5.3

June 1 6 mi N San José del Cabo, 250±ft., Baja California

331 ♀ ^{NO} amb *Oasypterus ega* 116-53-10-17"-10" ex. 356 11.7

332 ♂ " " 110-49-10-16"-9" ex 329 10.2

333 ♀ ^{1emb} 16mm *Tadarida mexicana* 92-33-11-19"-13" ex 308 8.9

334 ♀ ^{1emb} 8mm *Myotis velifer* 89-39-11-15"-11" ex. 264 5.7

June 2 Same location

335 ♀ ^{2emb} 5mm *Oasypterus ega* 120-51-10-16"-10" ex 358 13.8

June 2 Cerro Cirilo, 600ft., 4 mi N San José del Cabo, Baja Calif.

336 ♂ *Balanopteryx plicata* 62-16-10-14"-10" ex 253 4.5

337 ♂ " " 60-15-10-14"-11" ex 255 4.1

338 ♂ " " 61-16-10-14"-11" ex. 249 4.3

339 ♂ " " 64-19-10-14"-11" ex. 258 4.5

340 ♂ " " 65-17-10-14"-11" ex 260 4.5

341 ♂ " " 59-15-9-14"-10" ex. 250 4.2

342 ♀ ^{1emb} 11mm " " 65-20-10-14"-11" ex. 265 5.4

343 ♀ ^{1emb} 12mm " " 65-19-10-14"-10" ex 258 5.3

344 ♀ ^{1emb} 12mm " " 63-18-10-14"-10" ex 255 5.0

345 ♀ ^{1emb} 12mm " " 66-19-10-14"-11" ex 258 5.2

June 3 6 mi N San José del Cabo, 250±ft., Baja Calif.

346 ♂ *Thomomys bottae* 213-61-31-7"-5" 125.3

347 ♂ " " 201-64-29-7"-4" 88.1

348 ♀ *Dipodomys merriami* 232-142-37-15"-13" 33.3

349 ♂ *Perognathus spinatus* 183-105-24-10"-6" 16.8

350 ♂ " " 192-115-23-11"-7" 18.9

351 ♂ " " 180-105-24-10"-7" 14.1

352 ♀ " " 194-96-24-10"-7" 14.6

353 ♀ " " 187-113-23-10"-7" 14.0

Catalog

June 3 1 mi N San José del Cabo, 250± ft., Baja Calif.

354 ♂ *Thomomys bottae* 201-60-30-6ⁿ-3^e 125.8

June 5 9 mi SW San José del Cabo, 300± ft., Baja Calif.

355 ♂ *Balanthopteryx plicata* 62-16-10-15ⁿ-11^e ex. — 4.2356 ♂ " " 64-16-10-14ⁿ-10^e ex 260 4.1357 ♂ " " 61-15-10-14ⁿ-10^e ex 248 4.0

June 5 1 mi N Cabo San Lucas, Baja California

358 ♀ *Balanthopteryx plicata* 69-20-10-15ⁿ-11^e ex 252 6.1

June 7 Punta Gasparina, 23°16'N, 110°09'W, 10± ft., Baja Calif.

359 ♂ *Perognathus arenarius* 172-96-23-10ⁿ-6^e 13.7360 ♂ " " 163-95-23-9ⁿ-6^e 12.9361 ♂ " " 158-97-22-9ⁿ-6^e 12.1362 ♂ " " 154-92-23-9ⁿ-6^e 12.2363 ♂ *Perognathus* ^{*arenarius*} ~~*spinatus*~~ 173-102-23-9ⁿ-6^e 12.7364 ♀ ^{no} emb " *spinatus* 179-108-23-10ⁿ-6^e 12.3365 ♀ ^{no} emb " " 183-104-23-10ⁿ-6^e 15.2366 ♀ ^{2 emb} 22 mm " " 175-101-22-9ⁿ-6^e 13.7~~367~~ 367 ♀ ^{no} emb " " 182-105-24-10ⁿ-6^e 18.1~~367 ♂ *Leptonycteris*~~

June 7 Cerro del Elote, 10 ft., 23°12'N, 110°09'W, Baja Calif.

368 ♂ *Leptonycteris* 71-0-15-16ⁿ-11^e 21.4

June 7 La Tenaja, 5 mi SE Punta Gasparina (Cape dist), Baja Calif.

369 ♀ ^{1 emb} 15 mm *Natalus mexicanus* 90-48-10-15ⁿ-10^e ex 272 5.0370 ♀ - *Pipistrellus hesperus* 64-29-7-12ⁿ-9^e ex. — 3.7371 ♀ ^{no} emb " " 70-30-7-12ⁿ-10^e ex — 3.5

June 8 Same location

372 ♂ *Perognathus spinatus* 194-116-25-11ⁿ-9^e 20.5373 ♀ ^{no} emb *Perognathus spinatus* 187-112-24-9ⁿ-6^e 13.9

Catalog

June 9 San Juan de la Serradera, 1600±ft., W base Sierra Laguna

374 ♂ *Cnemidophorus maximus* 478 133sv 65.6375 ♂ *Callisaurus draconoides* 138 59sv 5.5376 *Cnemidophorus hyperythrus* 190 54sv377 ♀ *Urosaurus* 85 41sv

June 11 La Laguna, 6200±ft., Sierra de la Laguna, Baja Calif.

378 ♂ ^{Test.} 4-3 *Sorex ornatus lagunae* 108-43-12-8"-3"379 ♂ *Peromyscus eremicus* - - 21-19"-14"380 ^{Skeleton only} *Empidonax*381 *Junco*382 ♂ *Pipistrellus hesperus* 65-28-6-12"-9" ex 196383 ♂ *Eptesicus fuscus* 91-41-10-16"-12" ex 276

June 12 Same location

384 ♂ *Neotoma lepida* 335-158-37-32"-26"385 ♀ ^{no} emb. " " 324-157-35-30"-25"386 ♀ ^{no} emb. " " 320-157-35-31"-26"387 ♂ ^{Skeleton only} *Peromyscus truei* 197-109-23-22"-19"388 ♀ ^{no} emb. " " 169-90-23-23"-20"389 ♀ ^{no} emb. " " 186-107-24-22"-20"390 ♀ ^{no} emb. " " 196-109-24-23"-19"391 ♂ *Junco*

392 ♀ "

393 ♂ "

394 ♂ *Gerrohnottus*395 ♂ *Tadainda mexicana* 86-33-10-17"-13" ex 293396 ♂ *Eptesicus fuscus* 94-44-10-11"-7" ex 298

June 13 Same location

397 ♀ *Peromyscus truei*

398 ♂ " "

Murray
1948

19

Catalog

June 12³ La Laguna, 1200±, Sierra de la Laguna, Baja Calif.

399 ♂ Spotted Towhee

400 ♀ " "

June 13 Todos Santos, 50± ft., Baja Calif.

401 ♀ *Turdus mexicana* 87-33-10-17"-10° ex 292 7.7

402 ♀ " " 93-34-10-18"-12° ex — 7.3

403 ♀ *Geothlypis trichas* 111-52-10-16"-9° ex — 14.3

June 14 Mina Estrella Polar, 600± ft., 3 mi E Pescadero

404 ♂ *Neotoma mexicana* 94-52-10-15"-9° ex 273 4.9

405 ♂ " " 89-48-10-15"-10° ex 257 4.0

406 ♂ " " 89-51-10-15"-10° ex 270 4.6

407 ♂ " " 89-48-10-15"-10° ex 260 4.3

408 ♀ ^{no} emb " " 95-53-10-15"-10° ex 278 4.2

June 17 Wend Blano de Hrey, 50± ft., Baja Calif.

409 ♂ *Dipodomys merriami* 147-150-39-15"-12° 32.5

409 ♂ *Dipodomys merriami* 232-138-36-14"-11° 38.9

411 ♀ " " 239-144-37-15"-11° 36.6

410 ♀ ^{2 emb} 17 mm " " 239-147-37-15"-11° 43.6

411 ♂ ^{no} emb *Dipodomys agilis* 253-155-43-15"-13° 41.5

412 ♀ ^{no} emb " " 215-158-40-16"-13° 60.6

413 ♂ *Perognathus baileyi* 167-82-25-10"-7° 28.4

414 ♂ " " 190-105-24-9"-6° 28.3

415 ♀ ^{2 emb} 2 mm " " 190-105-26-10"-7° 21.3

June 18 San Jorge, 25° 44' N, 112° 07' W, Baja Calif.

416 ♂ *Onychomys leucogaster*

disc 417 " "

June 19 Same location

skull only 418 ♂ *Perognathus baileyi*

Murray
1948

20

Catalog

June 19 San Jorge, 25° 44' N, 112° 07' W, Baja Calif.

skull only	419 ♂	Perognathus arenarius		
skull only	420 ♂	"	"	
	421 ♂	"	"	
	422 ♀	"	"	
	423 ♀	"	"	
	424 ♀	"	"	
	425 ♀	"	"	
	426 ♀	Peromyscus maniculatus	172-76-25-18 ⁿ -16 ^c	31.4
	427 ♂	"	154-70-21-17 ⁿ -14 ^c	22.8
	428 ♂	"	160-68-23-18 ⁿ -16 ^c	25.0
	429 ♀	"	182-84-23-19 ⁿ -17 ^c	29.2
	430 ♀	"	177-82-25-20 ⁿ -18 ^c	24.8
	431 ♀	"	174-80-24-19 ⁿ -17 ^c	23.3
	432 ♂	Perognathus baileyi	167 ⁿ -93 ⁿ -26-10 ⁿ -6 ^c	17.4
	433 ♀	Perognathus arenarius	157-91-22-8 ⁿ -6 ^c	11.4
caught by Lewis	434 ♂	Perognathus baileyi	205-115-26-10 ⁿ -6 ^c	24.7
" "	435 ♂	"	195-107-25-9 ⁿ -6 ^c	22.1
" "	436 ♂	"	184-106-26-10 ⁿ -6 ^c	18.8
" "	437 ♂	"	188-105-26-9 ⁿ -6 ^c	16.6
" "	438 ♀	"	169-91-24-8 ⁿ -6 ^c	14.9

June 20 Same location

440 ♂	Peromyscus maniculatus	186-85-24-20 ⁿ -18 ^c	33.2
441 ♂	"	176-79-25-19 ⁿ -15 ^c	26.4
442 ♂	"	180-82-24-20 ⁿ -18 ^c	28.0
443 ♂	"	201-86-25-20 ⁿ -17 ^c	47.0
444 ♂	"	184-82-25-20 ⁿ -16 ^c	39.6
445 ♂	"	193-81-24-19 ⁿ -16 ^c	37.0

Murray
1948

21

Catalog

June 20 San Jorge, 25° 44' N, 112° 07' W, Baja Calif.

446	♂	<i>Peromyscus maniculatus</i>	182-84-23-19 ⁿ -17 ^c	30.7
447	♀ noemb	"	185-86-25-20 ⁿ -18 ^c	29.1
448	♀ " "	"	182-84-24-19 ⁿ -18 ^c	29.8
449	♀ " "	"	200-92-25-20 ⁿ -18 ^c	33.2
450	♀ " "	"	193-89-24-20 ⁿ -17 ^c	33.2
451	♀ " "	"	173-80-25-19 ⁿ -16 ^c	27.4
skel only	452	♀ " "	189-90-25-21 ⁿ -18 ^c	27.4
"	453	♀ " "	109 ⁺ -25 ⁺ -24-19 ⁿ -16 ^c	18.7
"	454	♂	177-76-23-19 ⁿ -17 ^c	34.7
	455	♀ noemb <i>Dipodomys agilis</i>	298-180-42-17 ⁿ -14 ^c	63.0

June 21 Same location

	456	♂	<i>Peromyscus maniculatus</i>	188-85-25-19 ⁿ -17 ^c	31.5
✓	457	♂	"	173-80-24-19 ⁿ -17 ^c	32.2
	458	♂	"	172-73-23-20 ⁿ -17 ^c	32.5
	459	♂	"	182-80-24-19 ⁿ -17 ^c	34.8
	460	♀	"	179-84-25-20 ⁿ -18 ^c	26.7
	461	♀	"	164-76-24-19 ⁿ -17 ^c	19.8
skull only	462	♂	"		
"	463	♂	"		
"	464	♂	"		
"	465	♂	"		
"	466	♀	"		
"	467	♀	"		
"	468	♀	"		
disc.	469	♀	"		
"	470	♀	"		
"	471	♂	<i>Neotoma lepida</i>		

Murray
1998

22

Catalog

June 22 San Jose de Comondru, 700± ft., Baja Calif.

472 ♀ *Pipistrellus hesperus* 71-27-6-12ⁿ-9^c ex 200 3.3

473 ♀ " " 73-25-6-12ⁿ-10^c ex 209 3.5
26° 32' N, 111° 37' W

June 22 8.3 mi N by road, Canipole, Baja Calif.

474 ♀ *Macrotus californicus* 91-38-14-34ⁿ-29^c ex 330 13.2

475 ♀ ^{1 emb} 24 mm " " 98-40-14-35ⁿ-28^c ex 341 12.7

June 23 Santa Rosalillito, 25± ft., SE end Bahía de Concepción

476 ♀ *Eptesicus fuscus* 101-44-11-16ⁿ-12^c ex 314 8.4

June 21 Calmalli, 1200± ft., Baja Calif.

477 ♂ *Choeronycteris mexicana* 77-10-12-17ⁿ-12^c ex 324 15.2
Calmalli,

June 21 Arroyo San Luis, 800± ft., 9 mi Wⁿ Baja Calif.

478 ♀ *Choeronycteris mexicana* 76-11-12-17ⁿ-12^c ex 327 16.2
77-10-12-17ⁿ-12^c ex 324 15.2

479 ♂ " " 75-10-13-17ⁿ-12^c ex 326 13.7

480 ♂ " " 71-9-13-17ⁿ-11^c ex 329 13.0

481 ♂ *Corynorhinus rafinesquii* 93-47-11-35ⁿ-30^c ex 280 6.1

June 28 10 mi SE Mesquiteal, 400± ft., Baja Calif.

482 ♂ *Dipodomys agilis* 300-185-43-17ⁿ-14^c 62.7

483 ♂ " " 289-171-44-18ⁿ-14^c 58.8

484 ♂ " " 276-165-43-18ⁿ-14^c 63.3

485 ♂ *Dipodomys merriami* 174⁺-70⁺-40-15ⁿ-12^c 39.7

486 ♂ " " 240-145-40-16ⁿ-13^c 42.4

487 ♀ ^{no} emb " " 220⁺-124⁺-39-16ⁿ-12^c 34.5

488 ♂ *Perognathus baileyi* 196-109-26-11ⁿ-7^c 20.6

489 ♀ ^{no} emb " " 183-108-24-9ⁿ-6^c 15.8

490 *Salvadora hexalepis* 865

June 29 Same location

491 ♂ *Perognathus baileyi* 202-115-26-10ⁿ-7^c 22.4

492 ♂ *Dipodomys merriami* 243-145-38-14ⁿ-11^c 37.3

CatalogJune 29 10 mi SE Mesquite, 400± ft., Baja Calif.

493	♂	<i>Dipodomys merriami</i>	238-144-39-15 ⁿ -12 ^c	35.2
494	♂	"	235-141-37-15 ⁿ -12 ^c	38.2
495	♂	<i>Dipodomys agilis</i>	283-174-43-17 ⁿ -15 ^c	55.6
496	♀ ^{no} emb	"	280-172-43-16 ⁿ -15 ^c	56.2
497	♂	<i>Neotoma lepida</i>	325-151-35-33 ⁿ -29 ^c	174.2
498	♀ ^{no} emb	"	302-142-36-34 ⁿ -31 ^c	131.6
499	♂	<i>Perognathus arenarius</i>	159-91-22-7 ⁿ -5 ^c	13.0
500	♂	"	132 ⁺ -65 ⁺ -20-7 ⁿ -5 ^c	9.6
501	♂	"	150 ⁺ -79 ⁺ -21-8 ⁿ -5 ^c	13.1
502	♀ ^{no} emb	"	152-85-21-8 ⁿ -5 ^c	8.9
503	♀	"	137-78-20-7 ⁿ -5 ^c	7.6
504	♀	<i>Dipodomys merriami</i>	243-145-39-14 ⁿ -11 ^c	36.2

June 30 Same location

505	♂	<i>Perognathus baileyi</i>	197-114-25-10 ⁿ -6 ^c	20.9
506	♂	"	197-115-26-10 ⁿ -7 ^c	18.1
507	♂	"	202-116-26-10 ⁿ -7 ^c	20.5
508	♀ ^{no} emb	"	190-109-25-10 ⁿ -6 ^c	17.8
509	♀	"	113 ⁺ -23 ⁺ -25-10 ⁿ -7 ^c	17.5
510	♂	<i>Dipodomys merriami</i>	241-145-39-14 ⁿ -11 ^c	38.7
511	♂	"	235 ⁺ -137 ⁺ -40-17 ⁿ -12 ^c	41.1

Skull only

512 ♀ *Lepus californicus*July 1 Same location

513	♂	<i>Perognathus arenarius</i>	158-89-23-8 ⁿ -6 ^c	11.9
514	♂	"	150-84-22-8 ⁿ -5 ^c	10.4
515	♂	"	159-92-22-8 ⁿ -6 ^c	9.6
516	♀ ^{no} emb	"	152-86-21-8 ⁿ -5 ^c	9.1
517	♀	"	148-90-22-8 ⁿ -5 ^c	8.3

Murray
1948

24

Catalog

July 1 10 mi SE Mesquital, 400±ft., Baja Calif.

518	♂	<i>Dipodomys agilis</i>	286-170-43-17 ⁿ -14 ^c	65.7
519	♀	"	285-168-44-18 ⁿ -15 ^c	60.6
520	♂	<i>Dipodomys merriami</i>	236-140-37-14 ⁿ -11 ^c	37.9
521	♂	"	347-152-39-14 ⁿ -11 ^c	38.0

July 2 Same location

522	♀	<i>Sylvilagus bachmani</i>	356-38-85-71 ⁿ -8 ^c	84.8
523	♂	<i>Neotoma lepida</i>	318-148-36-35 ⁿ -33 ^c	144.1
524	♀	"	331-153-35-34 ⁿ -31 ^c	153.2
525	♀	<i>Thomomys bottae</i>	200-63-29-5 ⁿ -4 ^c	70.2
526	♂	<i>Perognathus arenarius</i>	151-80-23-8 ⁿ -5 ^c	9.7
527	♂	"	129-61-23-8 ⁿ -5 ^c	9.7
528	♀	"	153-90-22-8 ⁿ -5 ^c	8.2
529	♀	"	155-90-22-8 ⁿ -6 ^c	8.7
530	♀	"	145-85-22-8 ⁿ -5 ^c	7.5
531	♀	"	148-85-22-8 ⁿ -5 ^c	8.5
532	♂	<i>Perognathus baileyi</i>	203-113-26-11 ⁿ -8 ^c	23.9
533	♀	<i>Dipodomys merriami</i>	249-150-38-14 ⁿ -11 ^c	39.0

July 1 534 ♀ *Lepus californicus*

July 3 Same location

535	♂	<i>Perognathus arenarius</i>	166-100-22-8 ⁿ -5 ^c	9.4
536	♂	"	142-76-31-7 ⁿ -5 ^c	9.1
537	♂	"	152-86-22-8 ⁿ -5 ^c	8.5
538	♀	"	143-84-21-8 ⁿ -5 ^c	8.5
539	♂	<i>Perognathus baileyi</i>	184-108-26-10 ⁿ -6 ^c	22.4
540	♂	"	186-106-26-10 ⁿ -7 ^c	18.9
541	♀	"	194-115-26-10 ⁿ -7 ^c	19.2
542	♂	<i>Dipodomys agilis</i>	290-173-45-19 ⁿ -15 ^c	65.2

Murray
1948

25

Catalog

July 3 10 mi SE Mesquital, 400±ft., Baja Calif.

543	♂	<i>Dipodomys merriami</i>	243-151-39-14"-11°	38.5
544	♂	"	248-149-38-15"-13°	34.1
545	♀ ^{no} emb	"	239 ⁺ -137 ⁺ -40-16"-13°	41.5
546	♀ ^{no} emb	"	244-147-38-15"-13°	39.0

July 4 Same location

skel. only

547 ♂ *Lepus californicus*

July 4 Same location

548	♂	<i>Neotoma lepida</i>	300-140-34-33"-29°	122.5
549	♂	"	343-162-36-34"-31°	175.6
550	♀ ^{no} emb	"	328-150-35-32"-20°	164.0
551	♀	"	294-134-33-33"-30°	126.2

July 5 Same location

552	♂	<i>Perognathus arenarius</i>	149-83-22-8"-5°	10.4	
skel. only	553	♂	" "	160-90-22-8"-5°	11.1
skel. only	554	♂	" "	180-98-23-8"-5°	9.1
	555	♀ ^{no} emb	" "	146-82-22-8"-6°	10.9
	556	♀	<i>Perognathus spinatus</i>	172-104-23-9"-5°	13.1
	557	♂	<i>Perognathus baileyi</i>	180-105-26-10"-6°	17.5
	558	♂	<i>Dipodomys agilis</i>	286-170-43-16"-13°	63.1
	559	♂	" "	277-166-40-15"-12°	58.0
	560	♂	" "	273-168-41-16"-13°	53.5
	561	♀ ^{no} emb	" "	273-163-40-16"-13°	58.8
	562	♀	" "	279-170-42-16"-13°	59.0

July 6 Same location

563	♂	<i>Perognathus arenarius</i>	139 ⁺ -74 ⁺ -21-8"-5°	10.7
564	♀	"	144-89-22-8"-5°	9.1
565	♀	"	133 ⁺ -72 ⁺ -22-7"-5°	8.4

Murray
1948

26

Catalog

July 6 10 mi SE Mesquite, 400 ± ft., Baja Calif.

566 ♀ skull only	<i>Perognathus spinatus</i>	163-102-21-9 ² 6 ^c	11.7
567	<i>Thomomys bottae</i>		
568	<i>Phyllorhynchus decurtatus</i>	205 190 sv	

July 7 Same location

569 ♂	<i>Perognathus baileyi</i>	197-116-26-10 ² 7 ^c	23.6
570 ♀	<i>Dipodomys merriami</i>	243-150-38-14 ² 12 ^c	38.0
571 ♀	<i>Dipodomys agilis</i>	269-162-43-17 ² 14 ^c	59.7
572 ♀	" "	273-169-41-18 ² 16 ^c	55.5

July 8 Same location

573 ♂	<i>Thomomys bottae</i>	180-60-28-5 ² 4 ^c	71.7
574 ♀	" "	215-68-31-6 ² 4 ^c	109.2

July 10 Same location

575 ♀	<i>Citellus leucurus</i>	202-62-35-12 ² 6 ^c	97.2
576 ♀	" "	193-63-36-12 ² 6 ^c	84.8
577	<i>Sceloporus magister</i>	69 sv	

July 11 24 mi NW Punta Prieta, 2000 ± ft., Baja Calif.

578 ♂	<i>Eptesicus fuscus</i>	99-42-11-17 ² 12 ^c	9.1
-------	-------------------------	--	-----

July 12 Same location

579	<i>Xantusia vigilis</i>		
-----	-------------------------	--	--

July 12 Cataviña, 1850 ± ft., Baja Calif.

580 ♀	<i>Eptesicus fuscus</i>	100-38-11-18 ² 13 ^c	10.6
581 ♀	<i>Pipistrellus hesperus</i>	69-27-6-12 ² 9 ^c 199 ^{ex}	3.5
582 ♀	" "	74-31-6-13 ² 10 ^c	3.5
583 ♀	" "	76-32-6-14 ² 11 ^c	4.3
584 ♀	" "	68-30-6-12 ² 9 ^c	2.8
585	<i>Bufo punctatus</i>		
586	<i>Bufo</i>		

Murray
1948

Catalog

July 15 8 mi N Rosario, Baja Calif.

587	♂	Dipodomys	278-172-42-17 ⁿ -14 ^c	50.5
588	♂	Perognathus	194-118-25-11 ⁿ -7 ^c	16.0
589	♂	Peromyscus maniculatus	162-78-22-20 ⁿ -17 ^c	20.7
590	♂	Peromyscus eremicus	189-112-22-21 ⁿ -18 ^c	19.6
591	♀	^{2 emb.} 12 mm " "	187-107-22-19 ⁿ -16 ^c	18.0

July 14 Same location

592		Crotalus ruber	905	800 s.v.
-----	--	----------------	-----	----------

JOURNAL

Murray
1948

Journal

Apr 6 E side Cocopah Mts. 21 mi. SSE Mexicali, Baja California

Left Berkeley at 10 AM Apr 3. Crossed border today without difficulty at Calexico after procuring a letter from the Governor. We are camped tonight in a broad rocky wash, surrounded on three sides by barren talus covered hills. There is ample ironwood and creosote along with several kinds of small, scrubby brush. Evidently after heavy rain this would carry a small flood of runoff water.

The road to this point has been newly graded, with a crushed rock surface. They are at work on it now, mostly building numerous small bridges. On the way were observed 1 American egret and several turkey buzzards.

⁵⁰
~~100~~ live mouse traps were set among the rocks, mostly under ironwood or creosote, at a distance of about 25 ft.

Apr 7 Point San Felipe, Lower Calif.

We broke camp and left at about 10 AM. The ⁵⁰~~100~~ live traps caught 3 Perognathus spinatus, 1 Perognathus ^{formosus} ~~balleyi~~, 3 Peromyscus crinitus. The road continued good, passing through several miles of cultivated fields, then through the perfectly flat and almost completely

Journal

Apr 7 Point San Felipe, Lower Calif.

barren Colorado flood plain. 20 miles out of El Mayor the road disappeared into a sea of sand and it was necessary to drive east around the mountains which were ahead. This was good enough going through the flood plain with good weather, but a storm would make it very muddy and probably impassable. While within sight of the gulf a flock of about 50 white pelicans were circling high in the air. We set up camp about a mile ^{south} ~~north~~ ^{west} of San Felipe, at a fishing camp on the cliffs overlooking the shore.

Apr 8 Same location

Put up the mice saved in the live traps from the day before. Our camp is located in and around an empty house which turned out to belong to the assistant Police Chief of Mexicali. Around it are sand flats or outcroppings of shale, while the beach is just below. Several talus covered hills are nearby, bearing very little vegetation in the almost solid shale. Shot a Cnemidophorus tessellatus in the sand and a Crotalus cerastes which was under rocks on a talus slope. I saw

Murray
1948

3

Journal

Apr 8 Punta San Felipe, 50 ± ft., Baja California

one Citellus leucurus in a sandy wash. It bounded off with tail flying high, traveling some distance and coming a little nearer; apparently reaching its own burrow in preference to hiding in the rocks. Uta stansburiana stejnegeri is exceedingly abundant here, living on the sand, at the bases of the rocky slopes, and particularly where there is any object to break up the expanse of flat terrain. There were several bats flying about at dusk; one of which, a Pipistrellus, Dr. Benson shot.

The weather to date has been perfect with pleasantly warm days and cool nights. Tonight, however, is quite warm. A breeze seems to arise briefly in late afternoon but soon dies away.

Set out ~~100~~⁵⁰ live traps on the talus covered hills, running up and over a high steep one near the shore. Also put out 10 Schuyler traps in the same area, each near a burrow with wood rat sign. Two American ravens flew overhead today croaking harshly several times.

Murray
1948

4

Journal

Apr 9 Punta San Felipe
Same location 50± ft, Baja California

In 50 live traps caught 1 ♀ Perognathus
spinatus, 1 ♀ Perognathus ~~penicillatus~~ ^{formosus}, 3 ♂, 2 ♀
Peromyscus crinitus. These were all on
the steep talus slopes about 25 feet apart.
The 10 Schuyler traps netted 2 ♂ 1 ♀ Neotoma
lepidota and 1 ♂ 1 ♀ Peromyscus crinitus, all
of which were discarded. Reset these and
left them out. They are baited with dried
figs.

Spent all morning and part of the afternoon
putting up my specimens - laboriously because
of lack of experience. The house here has proven
a pleasant place in which to work.

Shot a ♂ Gambelia wislizeni as it sunned
itself on a rock between two rocky hills. It
was rocky ground with sand no closer than
100 ~~feet~~.

Not less than 4 American ravens were around
today and they may be seen quite frequently
soaring up and down the beach looking
for dead fish. Birds are not abundant here
however. Dr. Benson got a Costa
hummingbird.

Today was warmer but still comfortable.
Maximum temperature 82°.

Northwest of here, or opposite the bay,
and over a rocky hill is an expanse of

Murray
1948

5

Journal

Apr 9 Punta San Felipe, 50± ft, Baja California
sandy desert terrain. There is much ocotillo, some creosote and an occasional copal tree. Encelia is present as it is over much of the flatter areas. Kangaroo rat tracks were everywhere.

Put out 50 live mouse traps on rocky hillsides, this time much of it hard volcanic rock with a few bushes scattered throughout. Did not go as high as before.

Tonight hunted among the rocks with a flashlight for geckos but with no success.

Apr 10 Same location

In 10 Schuyler traps, about the same location, took only 2 Peromyscus crinitus, 1 ♂ and 1 discarded. In 50 live traps, 2 ♂ Peromyscus crinitus, 1 ♂ 3 ♀ Perognathus formosus, 1 ♂ 2 ♀ Perognathus spinatus. It took me all day just to skin these.

Dr. Benson's steel traps have taken one coyote to date. This morning one had been carried off. Today Lewis shot one and trapped two Citellus leucurus which seem moderately common. The natives report the presence of rabbits and skunks, though none of either have been seen.

Several kangaroo rats were released in the morning, and shortly after one was

Murray
1948

6

Journal

Apr 10 Punta San Felipe, 50± ft., Baja California.

hopping around the front porch, unconcernedly picking up seeds. It ignored activity and noise from within and allowed us to move slowly around it. Later one was in back of the house and one also turned up in the bread. This fellow was quite tame and perched on our hands without struggling. Tonight a Perognathus spinatus is running freely around, replacing the formosus which has been around previously every night and become quite tame. (See species account)

Today for lunch we had boiled octopus or pulpo as the Mexicans call it. The flavor is quite good but they are tough and rubbery even after considerable cooking, and take some effort to prepare.

The temperature reached a maximum today of 80.5°, then again reached that point this evening. Now, 10 PM, there is a stout gusty wind threatening to become quite a gale.

What must be an Amniella pulchra turned up in the sand under our dinner table, unfortunately with a smashed head. I thought this was out of their range.

Murray
1948

7

Journal

Apr 11 Punta San Felipe, 50± ft., Baja California.

Just before sunrise, from our beds we could see a coyote skulking around, tail tucked between legs, about 50 yards away. He was probably investigating the carcass of a coyote thrown there previously. Dr. Benson tried to get a shot at him but he had already become frightened.

Dug around in the sand at camp, hoping to find another Anniella but got nothing more than a beetle for my pains.

3 boys from the village just came along and left us a 3 lb. corbina, a cod-like fish which seems to be the main catch at the village this time of year. Later they returned and sold us a sack full of mullet for one peso.

From 11 AM to 2 PM Tevis, Quast and I hunted through the flat desert section over the hill and northwest of here. Essentially it is made up of three types of terrain; much of it sand with creosote, encelia, ocotillo, and an occasional copal tree. Other parts have a solid pack of small rock and quite a bit of palo verde, along with more encelia and several unidentified bushes - considerably more vegetation in all. There is also some sandy wash

Murray
1948

8

Apr 11 Punta San Felipe, 50[±] ft., Baja California

dotted with granite rocks and containing some of most of the kinds of vegetation.

Mammals and birds were scarce.

I saw one lone jackrabbit, rather large, in the wash. There was a wood-rat nest

in a large dead bush with straw like material and several green branches lying around. This is the only nest I have seen here which wasn't in a hole, and it wasn't very well built up. There were many kangaroo rat tracks in the sand.

A verdina costa hummingbird, and ash throated flycatcher ^{also blackthroated gray warblers} were in the wash.

A red-tailed hawk soared overhead.

Of the reptiles I saw 5 Callisaurus draconoides, 2 immature, 10 Cnemidophorus tesselatus, 2 Dipsosaurus dorsalis, and a great many Uta stansburiana.

The Callisaurus were all in sand; ran very rapidly and did not allow any closer approach than 15 feet. Their tails curled up as they ran. One Cnemidophorus was well up on a rocky hillside on the far end; the others were distributed throughout all parts of the flat land (See species account).

There was no sign of any Phrynosoma,

Murray
1948

9

April 11 Punta San Felipe, 50 \pm ft., Baja California
strangely enough.

There is a great differential in the tides here, when low exposing a strip of rocky shore which is quite rich in invertebrate life. Many fiddler crabs are under each rock, and almost all the old mollusc shells contain hermit crabs. There are the aforementioned octopi, numerous brittle stars and a myriad of other forms. Either Royal or Caspian terns fly commonly over the shore. I stirred up 6 long-billed curlews on the shore and they flew closely bunched out over the water, very close to its surface.

Now Tevis has come in with a Phrynosoma and a Urosaurus graciosus, neither of which we had seen here.

This evening at dusk I shot a ♂ Sadaria Mexicana, one of several flying around. The wind has come up with a vengeance and we welcome this house more than ever.

April 12 Same location

We are breaking camp this morning with the intent if possible of going up to the Sierra San Felipe to the northwest. Went into the village and took on water.

Murray
1948

10

Journal

Apr 12 Punta San Felipe, 501 Ft., Baja California

Reptiles seen here were:

Callisaurus draconoides - rather often seen in sandy area.

Cnemidophorus tesselatus - very common in all parts of flat desert terrain.

Uta stansburiana - Very common, especially on the stretch just above the shore.

Lamelia wislizenii - I took one and Dr. Benson the other. Both were in sandy area.

Dipsosaurus dorsalis - Saw several. Seems fairly common

Anniella pulchra? Found in sand at camp

Urosaurus graciosus - Tervis caught one in sand dunes.

Phrynosoma platyrhinos - Same as above

Crotaphytus collaris - Dr. Benson shot one in the rocks.

Crotalus cerastes - I shot one under rocks on talus slope. Dr. Benson got two about midnight in the sand.

Mammals seen were:

Perognathus spinatus - Common among the talus covered hills.

Perognathus formosus - Caught 5 in rocks - talus covered hills. Some were also found in rocky washes by others.

Murray
1948

11

Apr 12 Punta San Felipe 50 \pm St., Baja California

Perognathus arenarius - Dr. Benson caught several out on the sandy desert

Peromyscus crinitus - Caught many on rocky talus slopes.

Peromyscus eremicus - 1 caught by Quast in rocks (later lost)

Dipodomys merriami - Common on sandy desert. Several taken by the others.

Neotoma lepida - Caught several on talus slopes. Their nests were quite commonly seen.

Lepus californicus - 1 only in sandy wash.

Citellus leucurus - Saw one. Lewis got three.

Pipistrellus hesperus - Shot one. Seen commonly each evening.

Tadarida mexicana - Common at dusk. Several taken by others.

Canis latrans - Dr. Benson trapped one. Heard once, saw one once. Others saw two or three at night.

Birds seen here were:

Turkey vultures - very common

American raven - " "

Caspian or royal tern - Several were usually flying around off shore

Murray
1948

12

Apr 12 Punta San Felipe, 50± ft., Baja California.

Blackthroated gray warbler - Saw one on ocotillo

Plumbeous gnatcatcher - Saw one

Verdin - saw several, usually in washes

Costa hummingbird - very common.

Long billed curlew - 6 were on shore.

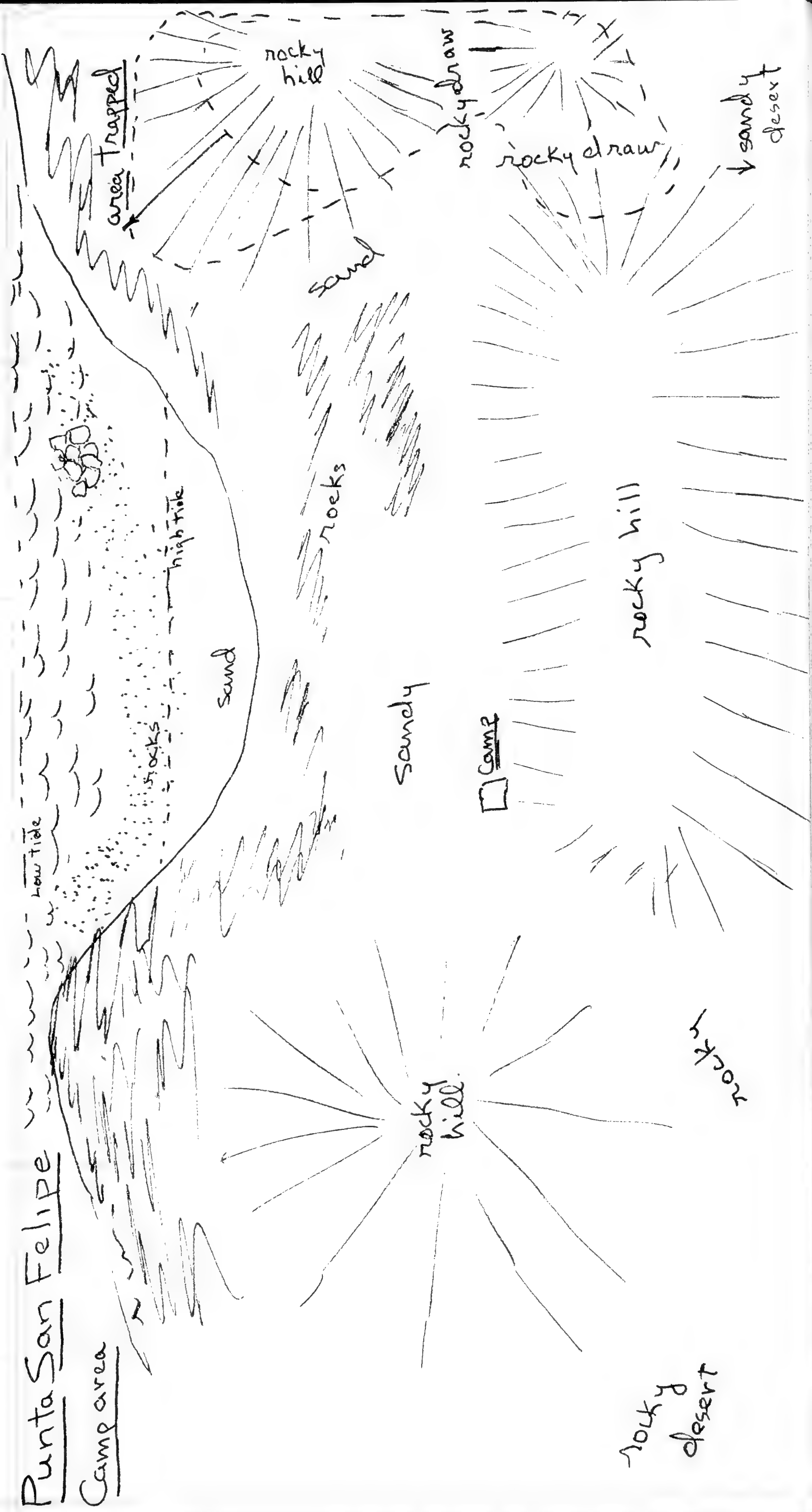
Red-tailed hawk - Saw one flying

Ash-throated flycatcher - Saw several.

Started west from San Felipe over a fairly good road and traveled through an oblong shaped stretch of desert. It was bounded to the south and southwest by the Sierra San Felipe and to the North east by hills. The sand was coarse and somewhat granitic, and bore rather heavy vegetation. There was much ocotillo and creosote, encelia, a few scrubby palo verdes, cardones, and many dried weeds. A few miles out we hit much ironwood and more palo verdes. Here too were frequent copals, often dead or sparsely leaved. The sand became coarser, completely granitic, and seemed to be a big flat wash from the mountains close by. We camped 9 miles from San Felipe in what was distinctly a big wash, relatively heavily vegetated and several hundred yards from the base of the mountains. We went out for a look at the landscape, but saw

Punta San Felipe

Camp area



Murray
1948

13

Apr 12 ^{9 mi W} ~~San Felipe~~ San Felipe, 700 ft \pm , Baja California
little. Shot one imm. Callisaurus draconoides.
Saw one blackthroated gray warbler, a
plumbeous gnatcatcher and several costa
hummingbirds.

Set out 50 live traps about 30 ft up the
base of the mountains. The mountainside
is solid granite rugged rocks, largely decomposed.
On it grows ocotillo, creosote and unidentified
shrubs. I find that down on the flat is
some cholla cactus.

Tonight about 10 PM we hunted around
the desert. Saw two Dipodomys which
became much confused by the lights. Almost
caught one by hand.

Apr 13 Same location

Took in traps which had 1 ♀, 1 ♂ Peromyscus
crinitus, 3 ♀ Perognathus spinatus. Put
up the specimens and broke camp. A Costa
hummingbird dove at our red handled broom.
They are the commonest bird here and may be
seen or heard at almost any time.
Saw what must have been the work of a
badger in the sand. The weather here has
been hot but not uncomfortable.

Drove back to San Felipe and then ~~to Mexicali~~
up the Mexicali road to El Mayor, on the
Rio Hardy. On the way Dr. Benson shot a

Murray
1948

14

Journal

Apr 13 Enroute El Mayor

Citellus tereticaudus and saw at least one Citellus leucurus. Since I am in the second truck I don't see much beside dust.

Apr 13 El Mayor, Rio Hardy, 30± ft., Baja California.

We camped not far from the road, between the river and the northern end of the Sierra El Mayor. Beside the camp, and all around the branched river is lush green vegetation. Much of it is mesquite. Arriving at 6:30 PM, there was just time to set out 50 live traps on the mountain slopes. Saw 4 American egrets just before we got there, along the river.

The mountains are mostly slaty shale with some areas of solid volcanic looking rock. Vegetation is sparse, with creosote and a little of other unidentified bushes.

Mosquitos are here! There are also plenty of gnats. Otherwise it is quite pleasant.

At dusk we saw numerous bats, some quite large, but couldn't manage to hit any. Saw a horned owl disappear over the mountain. Earlier heard a cactus wren, Gila woodpecker, ash-throated flycatcher.

There is a frog croaking down by the river. A woodwill flew over.

Murray
1948

15

Journal

Apr 14 El Mayor enroute Mexicali, Baja California.

Took in traps which had 1♂ Peromyscus eremicus and 1♂ Peromyscus crinitus. Put them up and broke camp, bound for Mexicali. As we were leaving I saw a white-crowned sparrow and Dr. Benson shot a Pipistrellus hesperus flying in a straight line (the bat). On the way there were several black-necked stilts, a willet, some sandpipers and coots, all in pools by the road. This was irrigated farm land - mostly hay raising.

Apr 14 Mexicali, Baja California.

Appeared at the Governor's Palace hoping for special hunting permits which had not been granted as yet from Mexico City. No word had yet arrived. We drove out the road to Ensenada and camped beneath the Sentinel Mountain or Cerro Centinela.

Apr 14 Cerro Centinela, 300± ft., 13 mi WSW Mexicali, Baja Calif.

We are in a sandy, slightly rocky wash, looking up at the mountain to the north it looks bare and uninviting from here. The wash has the omnipresent creosote and ironwood, plus several bushes I can't identify, and some ocotillo; all pretty sparse. The weather is muggy and stifling.

Put out 50 live traps in a channel in

Apr 14 Cerro Centinela, 300⁺ Ft., 13 mi WSW Mexicali, Baja, Calif.

the wash, mostly following the ironwood.

We erected a tent for the first time, anticipating tomorrow's weather. There are many Dipodomys tracks and holes, and some kit fox tracks. Saw a night hawk of some kind. Have often seen Pepsis wasps here in the desert but can't imagine what they use for spiders.

Visited my trap line at about 9PM and turned out 4 Dipodomys merriami.

Apr 15 Same location

Had 7 more Dipodomys merriami in the traps, of which I kept 3, 2♂ and 1♀. Also had one ♂ Perognathus formosus. The minimum temperature last night was 78°.

Dr. Benson went into town to see about the permits, and Quast to have teeth pulled. Put up the mice with blessings on the tent. It broke 100° today.

Moved my trap line down the wash about a mile north. Here it is sandier over most of the extent of the traps, with the wash cut a little deeper. If anything, the vegetation looks a little greener, with more small ironwoods. There is much of what we finally identified as indigo bush. It is in bloom now with small purple flowers. The traps were

Murray
1948

17

Journal

Apr 15 Cerro Centinela, 3000± ft., 13 mi WSW Mexicali, Baja Calif.

Set 50 to 70 feet apart, about double the distance of the night before. Tonight is a fairly bright moonlight night.

While setting traps saw a mourning dove in the ironwood, which called several times. Tonight bat sounds may be heard.

In the sandy part of the wash were 5 holes which looked like the work of a badger. Three were deeply dug, and two just begun - all in the open and within a 15 foot square area.

Apr 16 Same location

Took in traps which had 4 ♂, 1 ♀ Perognathus baileyi, 1 ♂ 1 ♀ Perognathus spinatus, and 4 Dipodomys merriami which I turned out. There is a great variation in their reactions when released. Some hesitantly look out of the trap and then hop slowly away, while others fairly fly out and head for the nearest bush at top speed. They usually jump to the ground from a height of 5 feet.

This time there were two mourning doves together. There was another badger hole in a rather rocky place - seemed to be quite deep. The dirt was mounded up behind it and must have been fairly fresh. Have seen no more kit fox tracks.

Broke camp and drove back to Mexicali

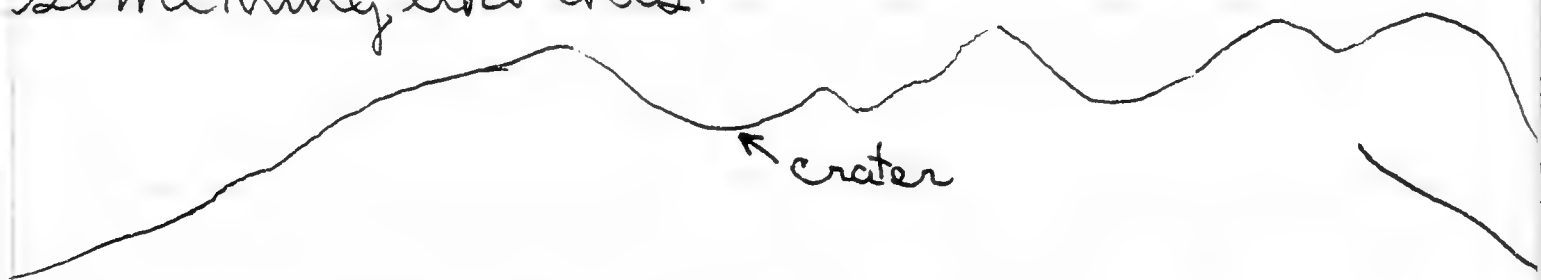
Murray
1948

18

Journal

Apr 16 Mexicali enroute Cerro Prieto

still trying to get collecting permits. There was no one at the governors palace, so we went on toward Cerro Prieto which is back on the way to San Felipe. Turned off on a dusty road through the farmlands which was thickly bordered with mesquites and followed beside an irrigation canal. We passed through the Rancho Cerro Prieto and up to the northeast end of the elongated peak. In profile there are three crowns with two saddles separating them. As viewed from the north west it looks something like this:



The ranchlands extend almost up to the base of the mountain on this side. Tried to drive around the road on the east but found a locked gate. Here there were ponds on the flat land with shallow water and alkali on the edges—apparently overflow from the Colorado River. I could see about 100 ~~egrets~~ ^{avocets} scattered throughout and dabbling in it.

While driving through farmlands and almost always beside irrigation ditches,

Apr 16 Mexicali enroute Cerro Prieto

saw many redwings in mesquites; the usual doves, which prefer to wait in the road until almost run over before flying off. There were two burrowing owls on the ground in a barren area between fields. A muskrat was swimming in irrigation ditch beside the road - this about an hour before dusk.

We looked around for a campsite, and wound up beside an irrigation ditch on farmland, near the farmhouse which supplied dogs, chickens and a bull to keep us company. Noticed that there was a gas pump there; the place is Agua Caliente.

The locked gate leads to the bubbling mud springs described by Nelson in 1906. Now they charge 5 pesos to get in.

We camped just at dusk, and in time to see a number of bats flying around, some of them big. Mr. Benson and Quast each got a Pipistrellus. We took a much needed bath and swim in the ditch. Could hear muskrats working - one was under some bamboo material from across the ditch, and made sucking noises.

This afternoon also saw a black Phoebe and 4 nighthawks flushed out of thick mesquite. There are plenty of mosquitos here.

Apr 17 Cerro Prieto, 30±ft., 20 mi SSE Mexicali, Baja Calif.

This morning moved the camp over to the base of the mountain in a little patch of mesquite. There is light soil around here instead of sand. Heard a cactus wren.

A little while later I climbed the mountain, circling around and coming up the south east side. This is strictly lava, varying from a few solid outcroppings to some areas of small broken up material. Much of the slopes has expanses of quite large rocks which have slid into great piles. There is but little growth, surviving in the earth which has blown into crannies. It is mostly creosote, with some others unknown to me. Most of the vegetation was concentrated in what very few gullies there were. Saw a pair of doves fly from rock to rock.

There are two distinct colors of rock; black and a rusty red. Where I was the SE side was largely black while the north was red and also the top. The other end appears blacker. At all points there was a certain amount of intermingling. The rocks were somewhat waterworn, but there was little washing in gullies.

Reaching the top I looked out over farmlands to the north, Sierra Cucopahs

Murray
1947

21

Apr 17 Cerro Prieto, 20 mi SSE Mexicali, Baja California

running along the west, with desert in between and to the south. Then on the east side there was some flood water from the Colorado, and alkali flats. On each side the lava runout appeared mixed with the soil somewhat and was greatly cut up from the water runoff.

At the top the rock was mostly outcroppings or finer material, with much more plant life. Tufts of grass are growing though much dried out. There is more of other bushes also. One tiny gray bush with holly like leaves was ~~to~~ common, though more often dead than not.

at the top I looked down on a distinct crater, with a flat bottom of cracked ^{dried} mud. It was roughly 210 by 80 yards at the bottom, and very roughly 250 yds across at the top. From the base of the crater to the uppermost point was about 200 ft. Growing in the mud is some creosote, just a few mesquites and some other bushes, mostly at the outer edges. There are many names and initials spelled out ~~the~~ with rock. Two lizards rapidly disappeared - acted like Cnemidophorus. There were

Murray
1947

22

Apr 17 Cerro Prieto, 20 mi SSE Mexicali

Two birds which I couldn't identify. A stout, steady wind blew on top. Lewis measured the highest point at the NE end at 650 feet above the camp. (30 ft.)

The weather today has been muggy, a little cloudy, and hot - reached just over 100°. Now in late afternoon a strong wind has come up.

A quite common bush around the camp and along the waterways has turned out to be a tamarisk. I have heard the calls of Gambel's quail several times. Saw a cactus wren and a loggerhead shrike, both in the same mesquite tree by camp.

Failed to mention that Dr. Benson last night caught a Macrotus californicus in a straw hut at the other camp. It was under a group of mesquites; full of large holes, yet ^{the bat} was bagged in a net after flying around inside for some time.

Climbed back up the mountain and set 50 live traps, 15 museum special mouse traps and 6 Schuyler traps all in the crater about 25 feet up from the bottom. These were all in varying sizes of lava rock - 25 to 35 feet apart. The spring traps were set after dark. One Schuyler trap was also set $\frac{2}{3}$ of

Murray
1948

23

Journal

Apr 17 Cerro Prieto, 30± Ft. 20 mi SSE Mexicali, Baja Calif.

the way up the mountain, in large rocks, in front of a woodrat burrow with fresh droppings. A very warm night tonight with wind which died down later.

Apr 18 Same location

The 15 mouse traps had nothing, with two of them sprung. Six Schuylers in the crater contained 1 ♂ Neotoma lepida, and the one on the hillside had one also which was discarded because of a crushed skull. In the 50 live traps were 1 ♂ 1 ♀ Peromyscus crinitus plus one immature which was released.

After putting up the mice we moved camp back to the irrigation ditch where we were before. This evening just before dusk, over 100 black-necked stilts flew overhead. Heard a kilder in the distance when almost dark. Dr. Benson shot an Eptesicus fuscus. That makes four species of bats from this spot, the others being Pipistrellus hesperus, Macrotus californicus, Jadarada mexicana. What was undoubtedly a Eumops was seen.

Maximum temperature today 93°. Very pleasant tonight except for mosquitos.

Murray
1948

24

Journal

Apr 19 Cerro Prieto enroute Las Palmas Canyon

While breaking camp Mr. Benson found a dead Eumops on the ground under the thick mesquites - 1st record in Baja California. Skull only was saved.

Came for the last time to Mexicali and found that the permits had been sent from Mexico City on the 8th probably to Berkeley. Will proceed and have them forwarded!

Passed our old camp-site at Cerro Centinela and reached the crest of the hill just beyond. Here we looked down on a great plain with the Sierra Juarez beyond. The Laguna Salada begins at this point and extends south - a flat, unvegetated alkaline plain as far as the eye can see. The road crosses the plain going west, then turns up toward the northwest and the mountains. The vegetation is fairly thick in most places - creosote, mesquite most of the time, and others in sandy terrain.

A little farther north came a change to rocky desert, a hard packed surface bearing mostly encelia, with creosote, cholla cactus, ocotillo. All were extremely dry.

As we started up the mountain, saw a

Murray
1948

25

Journal

Apr 19 Sierra Suarez, Baja California

California ground squirrel in a rocky wash.

We have decided not to go to Las Palmas Canyon, but to go on through to Ensenada. The mountain here is mostly strata of shale, with some sandstone and much granite. There is a stream with some water coming down a deep canyon strewn with granite boulders. Along its margin are mesquites and tamarisk with even a little grass growing. The mountain slopes themselves have little but encelia, cholla, and a few other scrubby shrubs.

Quite some distance up grief befell us. The International got sick and died and we spent considerable time working over the fuel pump and line. Finally it would run a little at a time by priming the carburetor and we struggled to the summit. The road up was quite steep, and tortuously wove back and forth straight up the mountainside rather than finding a pass.

At the top is a thriving little village called Alaska on the map and road signs but apparently El Rumborosa by the inhabitants. Here we camped finally at 9 PM.

Murray
1948

26

Journal

Apr 20 Alaska, 4400 ft., Baja California

We awoke this morning to get our first real look at the top of the mountain. It is beautiful country; numerous pinyon pines and scrub oak dominates. There are many large granite boulders or extensive outcroppings, and a yellowish granitic, sandy topped soil. Scattered about are agaves, yuccas and cholla cactus. Very common but varying with the spot as to quantity are *Adenostoma*, sumac, manzanita, ceanothus and juniper, with a bountiful variety of other kinds of shrubs. Many were in bloom. Grass was on the ground with some other flowering plants including indian paintbrush. The variety of vegetation is quite impressive.

Saw a green-tailed towhee which flew furiously from the base of one scrub oak to the next a number of times, always out of sight. There were several plain titmice, a pileolated warbler, and a canyon wren among the boulders singing lustily.

There are a number of Sceeloporus orcutti, all appearing on the rocks. Shot a Uta stansburiana hesperis on a rock. The others have seen Eutamias



Murray
1948

27

Journal

Apr 20 Alaska, 4400 ft., Baja California

merriami, and Lewis found gopher workings. There was an olive sided flycatcher nearby.

At about 1 PM we started off on the Tecate road, still nursing the International. It was fairly level for a while, passing through some areas which were white as snow with granite rock. Most was a light growth of scrub oak, juniper, agaves and cholla — some grassy slopes. Saw a jack rabbit and Californian Ground squirrel up higher.

Began an even, gradual descent through chaparral growth, much of it dense Adenostoma with sage brush and considerable short grass. Then entered a thick "forest" of another form, Adenostoma sparsifolia or red-shank. This is leaved only on the upper branches and grows from 4 to 7 feet high. We camped for the night in a clearing beside a dead cow and a spring.

Put out 50 live traps and 50 museum special mouse traps, all in the thick Adenostoma. Followed a narrow sandy creek bed most of the way with the live traps and cow trails with the others, otherwise it would have been tough going indeed.

Dr. Benson has soldered a hole in the gas line which was undoubtedly the trouble.

Murray
1948

28

Journal

Apr 21 Agua Hediondo, 32° 30' N 116° 16' W, Baja California

The live traps contained 3 Peromyscus maniculatus, all of which were released.

In the jump traps were 2♂, 1♀ Dipodomys agilis, 1♀ and 1 imm. Peromyscus californicus, 2♂ 1♀ and 2 discarded Peromyscus maniculatus. There was a noticeable grouping of the catch into certain areas, yet those areas differed—some caught in open ground or mixed vegetation, others not.

Our camp is beside an active spring supporting four tall willows, with a grassy clearing extending around and some distance below it. This is a very noticeable landmark from up the mountainside, being completely hemmed in by the red-shank growth. There are a few manzanitas and Ceanothus mixed in, along with the commoner Adenostoma and sagebrush in more open spaces here and there. Many cow trails run throughout. Saw brush rabbit tracks and piles of droppings.

Last night's minimum was 32° and we felt every degree of it—haven't dropped much in altitude yet, though Alaska was it nearly so cold and a good bit higher. Today is mostly sunny yet still chilly.

There are gophers workings in the clearing and Lewis has caught several.

Murray
1948

29

Apr 21 Agua Hedionca, 32° 30' N 116° 16' W, Baja California

Heard several coyotes barking last night, probably three, from different directions.

The spring is a mecca for birds. Saw a Scott oriole, Western tanager, ash throated flycatcher, California jay, Pileolated warbler, pair of ^{calif.} quail and numerous doves. A horned lark rummaged in the grass nearby. Heard a Sewainson's thrush, several wren-tits, and last night kildeers.

After lunch started again on our way. The road down the mountain has been pretty rough in places, but satisfactory going. Now it is somewhat better. The terrain has been varied, passing through foot hills usually rocky, with different combinations of both Adenostomas, sage brush and down lower live oaks, elderberry and other chaparral covers, typical of a lot of southern California. The down grade was still gradual. Entered ranch country and from there on in the road was very good. The highway from Tecate to Tijuana is being improved, and about half way on is paved. There is good asphalt on down to Ensenada. We arrived there this evening and camped just outside of town on the shore.

Murray
1948

30

Journal

Apr 22 Ensenada to San Quintin

Spent the morning in town shopping and having the spring fixed on the International.

When underway found paved road to Santo Tomas, then a graded crushed rock surface which is being improved now. The terrain was mostly red soil with sandstone, for some distance bearing a chaparral vegetation of sumac, live oak, scrub oak, sagebrush and dwarf buckeye. Past Sto. Tomas it became largely agaves and sparse growth of low shrubs.

We drove rather late, stopping at Santo Domingo to eat, and continued on to San Quintin. Camped here in the cold and fog for the night. (also wind)

Apr 23 San Quintin to San Fernando Mission

What used to be a deserted town is now nothing - has been torn down.

This is a flat sandy area with a few low shrubs and a small *Mesembryanthemum*. Gathered a bucket full of oysters from the shore which were delicious.

We passed through brush covered hills with agave and cactuses to Socorro. Where there is now a small settlement. There was a hard wind blowing across

Murray
1948

31

Journal

Apr 23 San Quintin to San Fernando Mission

a small level plain which juts out into the sea. The vegetation was low scrubby shrubs and agave in a fine, somewhat sandy soil.

There was more of this passing up into rounded mountains, then descending to Rosario in a valley. Found a red tailed hawk lying in the road alive yet unable to move. The road from San Quintin has been pretty rough yet not troublesome.

Rosario appeared the center of a farming community in the valley. Had two stores, restaurant and a school. Out of this town we began to climb and the road became very slow rough going. There was small smoothed granite rock in the soil, brush, agaves and several kinds of cactus. About 35 miles from El Marmol we hunted through a turquoise mine for bats. Got a Choronycteris mexicana.

We climbed into the beginnings of great arid areas, with gigantic cardons, barrel cacti and other kinds. The soil became mostly red again. Creosote has reappeared along with other bushy shrubs.

Murray
1948

32

Journal

Apr 23 San Fernando Mission, 1500 ft, Baja California

Continued on to San Fernando where we camped in the mesquites near the mission. This is a narrow valley, bordered by a fairly high mountain to the south and lower hills north. These are covered with cardons, much cholla of two varieties, viznaga, pitaya, cirios over much of the slopes and a thorny shrub. The soil is light with much sandstone.

In the valley is found water in great abundance - numerous ponds and swampy areas bordered by salicornia and with thick mesquite all around. ~~Sedge~~ tules and spear grass grow in the marshy places.

There is at least one family, living beside the mission which now is only a corner still standing.

There are a great many birds here. Heard quail and saw a number of swallows in the evening.

Set out 50 museum special traps in salicornia and under mesquite as close to the water as possible, hoping to find shrews. There is a great chorus of hylas tonight. Looked around for toads but found none.

Murray
1948

33

Journal

Apr 24 San Fernando Mission, 1500 ft., Baja California

My 50 traps were empty and untouched. Saw a yellowthroat and 2 plumbeous gratcatchers. Heard several white winged doves.

We have discovered that the common thorny bush on the hill is lyceum.

The minimum last night was 32° , although today has warmed up comfortably. It was clear with almost full moon.

Looked up on the hillside among the cholla, cardons etc for snakes and lizards but to no avail. However saw three Cnemidophorus tessellatus in the valley where the dry desert vegetation joins the mesquites. They were very timid here. Shot a Cnemidophorus hyperythrus among the mesquites.

We started off at 1 PM, climbed a little more, then leveled off into a long plain to Onyx. There were many cardons, cirio, cholla, viznaga and creosote. The scotillo also started again. Here it was a hard pockel, rocky surface most of the way, but some stretches sandy.

Onyx is still a thriving mine, supporting 200 people. Mr. Brown, the manager, said that the Mexicans hunted mountain sheep and deer within a weekend's trip, and



Journal

Apr 24 12½ mi S by road El Marmol, 2200 ft., Baja California
That the sheep were still plentiful.

We went on, climbing a little, passing a number of low table mountains. The soil became granitic and there were many large granite boulders. 12½ miles up the road we camped beside a great rock. Noticed that these are exfoliating in large thin sheets yet are not much decomposed. This is a flat stretch, very rocky, with many cicos, a few cardons, cholla, viznaga, pitaya, creosote and several kinds of low gray shrubs.

Set out 50 live traps about 50 feet apart largely among rocks. Placed 9 Schuyler traps in front of wood rat nests. These were quite common, always among large masses of boulders or a very large single one. Their nests were mostly dried parts of cholla where exposed, but running in under the rocks.

Shot a *Uta stansburiana* in the sand.

Apr 25 Same location.

The traps had 1 ♀ Perognathus fallax and 1 ♂ Peromyscus eremicus. There was a full moon in a clear sky last night.

Left about 1 P.M. Found the terrain becoming much rockier with great granite outcroppings. There were more cardons

Murray
1948

35

Journal

Apr 25 La Fortuna Mine, 2350 ft., 2 mi. N Iquima Seca Chapala, Baja Calif.
and scrubby copals began. Some distance
farther the terrain changed to granite
sand hard packed with a few smaller
rocks and only creosote and a few
kinds of low brush. Shot a Cnemidophorus
tesselatus. Saw 2 antelope ground
squirrels along the way. Past Rancho
Santa Inez there were rolling hills and
plains with a prairie like low brush
consisting principally of creosote. The
soil was covered with small igneous
rock of a dark rust color. We passed
one great mound of granite boulders.
Made camp rather late at the ^{abandoned} La
Fortuna Mine where we will look for bats

Apr 26 Same location

Hunting through the mine shafts last night
resulted in 8 Choeronycteris mexicana, of which
2 were young still clinging to the mother
and another young one hanging. There were
also 8 Centrozous. This morning we looked
again and found 2 more Choeronycteris mexicana.
The mine consists of several inclined shafts,
leading down to horizontal tunnels on
two levels, the lower being about 50 ft. below
surface. These tunnels were moderately long
and 4 to 5 ft. approximately in height. Through

Murray
1948

36

Journal

Apr 26. La Fortuna Mine, 2350 ft., 2 mi N Laguna Seca Chapala, Baja Calif.

most of their extent they were in total darkness. In blind tunnels the bats were pretty much at the back end. Where they get water is a question. The nearest we know of is many miles away. The Choeronycteris have very long, slender tongues, well adapted to getting pollen or nectar if that is really what they eat.

The surrounding country is dry and ^{flat} rocky, with a sparse vegetation of stubby brush and a few cardons and cirios. The mine however is on a hillside, with also many agaves around.

Saw a Callisaurus which was surprising-ly tame. We could hear quail in the distance.

The highest temperature, measured in the lowest tunnel was 72°. There were many indications of woodrat workings, extending even into the deepest parts of the mine.

We got underway at 2 PM after putting up the bats. Crossed the bare Laguna Seca Chapala, a flat surface of dried mud, then entered an interesting area of dense vegetation including just about all the forms we have seen around here. There were many more ocotillos, and a little farther along the copals, palo verdes and many tall yuccas. All the familiar cactuses

Murray
1948

37

Journal

Apr 26 Enroute Punta Prieta

were represented.

On the way saw several white-winged doves, 2 very dark red-tailed hawks and 2 Callisaurus which ran in front of the truck. In the lead truck they saw several Citellus leucurus and caught 2 Phrynosoma, 1 Crotalus

The road along here has been much better than ~~previously~~ ~~improved~~ and allows more rapid travel. We have been pumping up the spare with a slow leak regularly, the other tire having blown out. Camped for the night about 7 miles beyond Punta Prieta.

Apr 27 30 mi SE Mesquital, 600± ft., Baja California

As we tried to get an early start, found that the International had trouble again. By pushing and pulling her up the hills we made it several miles to Rancho El Rosarito, where a truck driver competently cleared out the carburetor. Then as we neared El Arco Mine expecting to have the tire repaired, it fizzled out completely and we had to camp on the spot. The day's travel was again through dense growth, featured always by much yucca. Some areas, however, were rocky and very dry with many of the plant forms

Murray
1948

38

Journal

Apr 27 30 mi SE Mesquital, 600ft \pm , Baja California
appearing dead. Cardons, cirios and
copals were present in varying combinations.
Very roughly the last 50 miles were in
the Vizcaino Desert. Here ~~was~~ seen much
orchilla draped over the larger plants,
and numerous lichens, indicative of
the high humidity here.

Set out 50 live traps by flashlight
on rather open terrain, flat ground covered
with small volcanic rock and packed
hard. There is a predominance here of ocotillo
and cholla, with yuccas, a few cardons,
and small shrubs. To the north is a low
rocky hill. Saw one jack-rabbit while
on the line.

Apr 28 Same location

The coyotes beat me to the traps. Two
were carried off about 50 feet and torn
open, another overturned and opened.
The others had similar trouble on their
lines. Only the first trap by camp
had 1 ♀ Dipodomys merriami.

The minimum last night was 47°, and
today's maximum 90°, though it doesn't
feel that hot. A high fog came in last
night and remained most of the morning.
Dr. Benson has gone into El Arco to get

Murray
1948

39

Journal

Apr 28 30 mi SE Mesquital, 600±ft., Baja California
the tires fixed.

This afternoon spent about 1½ hours hunting. Saw 2 jack rabbits and 1 brush rabbit, also 23 Callisaurus draconoides and 5 Cnemidophorus tessellatus. Shot one each of the lizards. Also got 1 Gambelia wislizenii. This is the first place we have been that Callisaurus was the more common. It is worthy of note that no swifts of any kind were found. All of the lizards were on the packed rocky ground, more commonly in open areas.

Apr 29 Same location

Off to an early start this morning about 8. Dr. Benson saw what he believed was a gray fox shortly after. We went into El Arco and beat around the thatched palm roofs of several buildings for bats; caught two. ^{Myotis volans} Also looked around in the mine shaft but found nothing. The mine is not operating now and there are just a few people living there, doing a little haphazard mining. Got 1 Uta stansburiana and 1 Callisaurus draconoides from some boys.

For about 40 miles the terrain was

Murray
1948

40

Journal

Apr 29 El Arco to San Ignacio

a soft yellowish sand, with vegetation remaining about the same. However, a new tree appeared which resembled the copal - smooth bark and a few rather large leaves. All this was quite flat, still in the Vizcaino Desert. Saw two Gambelia wislizenii of which I took one about 20 miles out of El Arco. At the same spot found also a Phrynosoma coronatum. On the way saw 6 Citellus leucurus and a jackrabbit, while the lead truck saw still more. Also there was a large Sceloporus on the sand; looked like magister.

After about 40 miles there was a change to very dry vegetation, though largely the same plants. Yuccas, cholla and creosote seemed to dominate a little more. There was wind blown sand, with frequent areas liberally sprinkled with rock. This continued until we climbed the volcanic plateau, whence it was very rocky.

Animal life was noticeably lacking through all this drier part. Descending into a broad valley we came into a large green area of palm trees which surround the town of San Ignacio. Here we went to the Mission, and with the cooperation of the

Murray
1948

41

Journal

Apr 29 San Ignacio, 300 ft., Baja California,

padre hunted for bats. The mission is stoutly built (1728) of volcanic rock and remains in fine condition. Prodding the cracks between the wall and a large wooden door produced a great stream of Tadarida mexicana, most of which we caught in nets. More prodding in a hole in the stone wall which opened into a larger space sent many more out into a net, amid the cheers and clapping of a large segment of the town's populace, which had gathered to give some help and a lot of advice. All have been very cooperative, including a small garrison of soldiers here. We are being allowed to work in an unused room of the mission and here we will put up the multitude of bats in the morning. Tonight at 10 PM an old room turned up 2 Macrotus, one of which we caught, and 1 Canyon wren. The wren clung to the wall a number of times, each time bracing with spread tail against it. In another empty room we caught 2 more Macrotus.

This afternoon after the bats had been stirred up there were a great number in the dome of the mission ceiling,

Murray
1948

42

Journal

Apr 29 San Ignacio 500 ft., Baja California

flying round and round clockwise with only a few flying in and out to spoil the pattern. It gave the impression of a great inverted whirlpool. Somewhat later, when the lights were on, there were still a number flying around inside.

Visiting the empty room again produced 2 Myotis ~~yumanensis~~ yumanensis, and 2 more Macroptes

Apr 30 Same location

The total catch of Iadina mexicana yesterday was 27 ♀, 19 ♂, divided among the four of us, of which 21 were retained as skulls only by Dr. Benson. Put them up this morning in great comfort.

The soldiers brought in 2 more Myotis yumanensis found in one of their rooms. They showed us a high room in one wing of the mission with stone walls and roofs. This we found to contain a number of Myotis yumanensis in narrow cracks in the ceiling. Caught 14; some shot, some netted. These were cataloged by Dr. Benson.

Tonight an Antrozous was taken in one of the rooms we hunted in last night. Saw several more Macroptes californicus but did not catch them. They would fly

Murray
1948

43

Apr 30 San Ignacio, 500 ft., Baja California
around a few times and hang up on the
stone ceiling momentarily, appearing
to swing into the upside down position
in one quick motion. The momentum
then made them rock back and forth
a few times.

May 1 San Ignacio to San Lucas

Departed from San Ignacio with 4 species
of bats: Tadarida mexicana, Myotis yumanensis,
Macrotus californicus and Antrozous (1).

We traveled for several miles on the
same lava rock terrain with many cardons.
Then went down a hill to a long flat plain
of gray sand and creosote, palo verdes, yucca,
ironwood. Near the end of this, came to
the first of the "Three Virgins", a large well
formed volcanic cone. Around it were
ledges of lava, the uppermost of which
was relatively fresh, unweathered material
rather porous and broken up. On it grew
little but scrubby copals. After circling
around the volcano we very sharply
descended from the lava plateau and
crossed a mixture of lava and sandy
desert. This was grown over with
a variety of cactus and brush, including
Cardon dulce or organ pipe cactus which

Murray
1948

44

Journal

May 1 San Lucas, 11 mi SSE Santa Rosalia, Baja Calif.
has been little in evidence previously.
Saw 4 Citellus leucurus. Around Santa
Rosalia it was relatively barren and
dust covered. Passed through the bustling
mining town and camped at San Lucas
11 miles beyond. Here we were located
under a palm thatched roof on the edge
of a small estero. Around its shores
grew clumps of mangroves, and mullet
jumped frequently. The surrounding
area was mostly bare with a few
low shrubs, appearing to have been
submerged in some manner previously.

May 2 Mulegé, 25 ft., Baja California

Started early on our way early, crossing
a long flat plain and paralleling mountains
on the west. This was dry and brush
covered with creosote, palo verde and
ocotillo dominant. Later an almost
forest-like growth of cardons appeared.

Passing east of other mountains we
were funneled into a valley of palms
and other verdant growth in which lay
Mulegé. Here we searched for bats in
a storeroom of the government building.
With great difficulty were able to force
a number of Idaia mexicana out of

Journal

May 2 Mulegé, 25 fl., Baja California
a long narrow crack between the plaster
~~ceiling~~ wall and wooden ceiling. Caught
20♂, 2♀, divided among us. This was around
noon. Then accompanied by the town's "mayor"
we searched through the mission for bats
but without results. It has been considerably
rebuilt recently, rooms plastered, etc., and
probably many bat hiding places are gone.

Later we heard bats squeaking from the
~~roof~~ of the large porch in back of the
government building. They were between
2x12 beams supporting the roof and
placed side by side with about $\frac{1}{2}$ " crack
between. We caught 45, with a number of
others getting away. Only 2 of these were
males. At dusk went up to the prison
to get some as they flew out. Only could
capture two. These were all Myotis
yumanensis. 10 were kept as alcoholics
by Dr. Benson, the rest skins, or skulls
only divided among us.

We are staying comfortably in an
empty room of the government building.
Discovered that a leaf is broken on one
of the Dodge's springs and we are staying
over to have it fixed

This afternoon saw many frigate birds

Murray
1948

46

Journal

May 3 Mulegé, 25 ft., Baja California

Last night took precautions against mosquitos as there is still a lot of malaria here. They say that everyone living here catches it - seem to take it as a matter of course. Apparently it is a mild form. Right now there are but few mosquitos and they are supposed to come in force in about a month.

In the afternoon took a look around town. This is a long canyon almost encircled by low mountains and running NE-SW. There is a great supply of water with a dammed up lake and large stream which varies with the tides from the bay. Crops seem to thrive here along with olives, bananas, figs, pomegranates, guamuchil, and a multitude of other trees, while palms are in very great numbers. In all a very attractive place.

Caught 1 Callisaurus draconoides on a rocky part of the stream bed. There were a number of others there, less timid by far than those on the desert.

This evening looked for a bat cave reputed to be in a canyon on the west side. Also set out 50 museum special mouse traps. This is a deeply cut box canyon

Murray
1948

47

Journal

May 3 Mulegé, 25 ft., Baja California
with narrow deep walled Y shaped origination.
There is palo verde and palo blanca, lumbei,
cholla, and other thorny bushes. The cliffs
seem to be bare volcanic rock, some of
it conglomerate, while parts of the wash
bottom are soft sand. The traps were
partly on the slopes, and in both rocky
and sandy wash.

At dusk a great swarm of Pipistrellus
poured down the canyon, of which Dr.
Benson shot 5. Many of them were around
the stream later when we reached it.
We heard that the bat cave is in the next
canyon.

May 4 Same location

The 50 traps caught exactly nothing. All
but a few had the bait stolen, probably by
ants. Two were snapped and disrupted.
Saw a vermillion flycatcher.

Packed up to leave but first went up
to the cave we had heard so much about
with the guidance of a soldier. Found the
mouth small, leading into a rounded out
cavern about 50 x 30 feet, and 5 ft. high
near the front tapering down to almost
nothing at the rear. The floor was covered
with a deep layer of fine powdery dust.

Murphy
1948

48

Journal

May 4 Bahía Concepción, 13 mi SE Mulegé, Baja California
probably many years accumulation of
quano with dirt blown in. At the rear
was a very small hole through which
Dr. Benson entered and found another
broad chamber about 3 feet high becoming
shallower at the sides. This in turn led
to another, much branched compartment.

All ~~apparently~~ is a natural formation.

In the inner part he found a great number
of bats, of which he netted many, and
the rest of ~~us~~ got more as they flew into
the outer chamber. They were mostly Macrotus
californicus, some Mormoops megalophylla,
and a few of what are probably Septomys.

After taking a necessary bath in the stream
we took off, driving over rocky terrain
and following fairly close to the bay.

Made camp under a cave-like overhanging
rock of volcanic conglomerate, beside the
road. It is only a few feet from the
shore of a circular inlet like a small
bay. This is sheltered by steep rocky hills
all the way around. In the northwest
a narrow channel leads into a small estero
very thickly grown with mangroves. The
shore around us is clean shell fragment
sand with some salicornia.

Murray
1948

49

Journal

May 4 Bahía Concepción, 13 mi SE Muligé, Baja Calif.

Set out 50 museum special mouse traps on a very rocky hillside. The rocks were dark brown, volcanic, and mostly fairly large. There was ocotillo, copal, creosote and some other thorny bushes, all rather sparse, and a scattering of small plants. Crossed two draws which were a little more vegetated.

An osprey circled around over the water and we could see several frigate birds flying some distance. At dusk a few bats came by. Dr. Benson shot a Myotis californicus.

May 5 Same location

In the traps were 7 (4♀, 2♂, 1 discarded) Perognathus spinatus, 4♂, 1♀ Peromyscus eremicus, and 2♂ Neotoma lepida. The Neotoma were both in very large rocks; one was killed and the other still alive but hooked around the neck by the mouse trap. There were noticeably more mice caught in the draws than on the exposed ridges.

Dr. Benson shot an oyster catcher

We found that in the mouth of the estero there were great quantities of clams, which we gathered and ate.

Murray
1949

50

Journal

May 5 Bahía Concepción, 13 mi SE Mulegé, Baja Calif.

Again set out traps, this time live traps. Put them in almost the same area but following straight up both sides of a canyon! (that crossed last night) The vegetation was the same. The interval between traps ~~both times has been~~ ^{was} about 50 feet.

Also set 6 Schuylers, 3 in small caverns beside the road which had been washed out of the rock. The others were among rock outcroppings on the cliff above up, 2 with woodrat droppings present.

This is very comfortable weather with a maximum temperature today of 92°, and a nice breeze. It remained quite warm last night.

May 6 Same location

Live traps held 4 ♂ 4 ♀ Perognathus spinatus, Peromyscus eremicus 2 ♂ 2 ♀. This time the catch was very predominantly in the half of the line on the west slope and a bit deeper in the canyon. Again the interval was 50 ft. The Schuylers were empty.

Spent most of the day putting up the mice.

Set out 50 live traps in several different areas. 15 were in salicornia at the base of the rocky cliff. There were numerous washed out caverns with some loose rock

Murray
1948

51

Journal

May 6 Bahía Concepción, 13 mi SE Mulegé, Baja Calif.
and a shell fragment gravel. 5 were on a salt flat section next to the mangroves with salicornia, some large leafy bushes - very salty crust. 15 were on an arm of shell fragment gravel which extended up the hillside among large rocks. There were a few palo verde, copals. 15 were on a fairly flat area of small rock at the base of the hillside where I trapped before. Vegetation was thin - mostly creosote and copal.

May 7 Same locations

There were 2 Perognathus spinatus in the 15 traps along the cliff; 1 spinatus in the salt marsh (edge, 30 ft. from rocks), 1 on the shell fragment hillside. Those among the rocks were empty but about 8 in one part were sprung.

Saw 2 oyster catchers flying close together, giving shrill crys. They dropped down close to the water and flew quite a distance in that manner.

Today we got several large conchae from a fisherman and tried them for lunch. They were a little tough but fine eating. Caught with a long rake and a row boat.

We left in the afternoon, traveling on a very rocky road partly on the cliffs

Murray
1948

52

Journal

May 7 Rancho Cadejé, SW end Bahía Concepción, Baja Calif.
above the bay and partly between high rocky hills a little inland. Much of the time were going up washes in which palo blanca was dominant.

Made camp where there was a long strip of very dense foliage along the shore. This was mostly a heavy, leafy bush which is called by the Mexicans mangrove dulce. Some grows as high as 12 feet.

On the way saw a brown pelican splashing in the water, and later 5 flying in line, each flapping and soaring in order as if by cue. A cardinal flew along a rocky hillside.

Set out 50 live traps among the dense dulce mangroves, and salicornia where it was a little more open. Within 200 yds was a steep rocky hill on the west. A few of the traps were in salicornia salt flats at the edge of the other growth.

Shot a small Pipistrellus hesperus at dusk. There were several flying down the road and almost all dove over my head, circled the shotgun muzzle and flew on.

This promises to be one of the warmest nights yet.

JournalMay 8 Rancho Cadejito Comandur

Caught 1 Perognathus spinatus, it being in one of the traps on the edge of the salt flat and among salicornia

Put up our specimens early and were underway by 9:30. Last night a great gusty wind came up and lasted quite a while. It will be plenty hot today though partially cloudy. We drove for a while on flat terrain, then through valleys and washes until arriving at Campole. There were consistently palo verdes, cardons, ocotillo and cholla, mixed with various other cactuses and brush. The road was quite good. After eating well and getting water we began to climb among volcanic mountains with rugged lava outcroppings and rocky slopes - also a rough rocky road which was hard on the tires. The International had a blowout yesterday and cannot afford another at this point. Saw 2 Dipsosaurus dorsalis. The road more or less leveled off on a very rocky plateau, then began to drop steeply. Soon we could look down into a very deep valley and see elongated

Murray
1948

54

Journal

May 8 San Jose de Comondun 700 ft., Baja Calif.
Comondun, impressively green. After a steep winding descent we entered it and wound up staying in an empty house in town.

May 9 Same location

Guided by some of the people here we hunted for bats in nearby caves. The canyon in which the town lies is bordered on each side by steep rocky slopes terminated on the top by sheer lava cliffs. At the base of these were a number of shallow caves, and a great many crevices which could contain bats. In all we could scare up only two in a small cave, of which Dr. Benson got one, a Choronycteris. It proved to be carrying a young one. He also shot a Citellus atricapillus which was on the rocky talus slope. We have seen two others today.

After lunch we looked again for bats - tried shooting into the palm trees and looked in more caves. We have also tried the church. The people say that some may be found hung up in the trees.

Murray
1948

55

Journal

May 9 San Jose de Comandú, 700 ft., Baja California

Today I have seen a verdin, canyon wren and a costa hummingbird which has a nest in a large tree behind the house. The nest is located on an outer branch, about 4 ft. high and poorly concealed. Saw a Streptosaurus meamsi and Cnemidophorus t. rubidus, both among the smaller rocks on the hillside.

This hillside is lava talus in great quantity, with ~~pitahaya~~ ^{pitahaya}, pitahaya dulce, cardon, lumboi, ocotillo, matacora and a number of other brush forms growing to a varying degree. In some places there are quite large boulders.

On this terrain behind our house to the south, put out 50 live traps about 50 ft apart.

Tonight we all went out to shoot bats in open fields among the palms. The others got Pipistrellus and Eptesicus fuscus. The pipistrelles were moderately common, began flying before dusk fell and stopped earlier than the others. Saw as many as 13 turkey vultures circling both high and low overhead.

In the afternoon Quast shot what I am sure is Streptosaurus repens on a rock.

Murray
1948

56

Journal

May 10 San Jose de Comondú, 7000 ft., Baja California

Caught 1 ♂ Perognathus spinatus in my traps. Last night Tevis found a Bufo punctatus, and Quast a Phyllodactylus rufus the latter among the rocks on the hillside.

At about 8 AM Tevis and I climbed the high hillside on the SW side again looking for bat caves. Of all those which appeared large from below there was only one partially concealed entrance which led into a big one, this at the base of the cliff in an area of metamorphic slaty rock. Most of the hill was lava.

The mouth was about 10 ft across, leading into a chamber of the same width and over 20 feet long. This had a high domed roof and branched into two small passages running upward. Each terminated in a very high crevice extending out of sight and other crannies in various directions. There was a connection between the two. The floor was a deep mass of guano, yet we did not see more than 6 bats at the most. Those were stirred up by shooting and were able to move around so freely that we were not in a position to catch them. I netted 1 ♂ Macrotus californicus and Tevis shot

Murray
1948

57

Journal

May 10 San Jose de Comondú, 700 ft., Baja California.

1. Leptonycteris which had flown out of the cave and was flying around in the space just outside. Inside were numerous Bassariscus droppings and one dried body.

Growing on the cliff and the slope just below we found wild fig, lumbei, copal, pitahaya dulce, ocotillo, cholla, prickly pear, garambullo, matacora, agave, palo blanco, echinocactus, frutilla and others unidentified.

We saw Bassariscus droppings among the rocks. ~~and a~~

This town seems to thrive mostly on fig orchards, with date palms, pomegranates, mangoes, papayas and other fruits, along with the usual field crops. A narrow stream runs down the center of the canyon but with less volume of water than in comparable towns.

In the afternoon packed up and left, driving first through San Miguel de Comondú, then on down the deep narrow canyon which was cultivated and full of trees for several miles. Farther along it was mesquites and other green shrubs, then broadened out into a particularly desolate sort of wash with a few half

Murray
1948

58

Journal

May 10 Pozo Grande, $25^{\circ}46'N$, $112^{\circ}02'W$, Baja Calif.
dead cardons and brush.

Coming down the canyon saw 3 Citellus
atricapillus

After the long descent we finally emerged onto the Magdalena Plain. Here was soft brown sand on which grew cardon, cholla, ocotillo and pitahaya^{agave}, all with considerable orchilla on them.

Came to Pozo Grande where we ate at a ranch house and then camped by the nearby pond. This was about 80×20 yds, bordered on one side by a few mesquites. Heavy use by cattle apparently precluded any more growth. Just before dusk the air was filled with violet-green swallows and a few killdeers. Then bats began to appear, seeming to pour out of a small rocky ridge along one bank. I netted 3 Myotis yumanensis by standing on a rock by the water, and the others shot some. These tended to stick rather close to the water and often close to the bank, sometimes flying into the bushes. A little later, larger bats appeared, among which Eptesicus fuscus was represented. We tried to hunt after dark by the light of truck headlights but to no avail. The

Murray
1948

59

Journal

May 10 Pozo Grande, $25^{\circ}46'N$, $112^{\circ}02'W$, Baja California
bats remained quite a while after dark,
however. Several times a flock of ducks
tried to land but were frightened away.
We believed them to be baldfates. Quast
caught a Bufo punctatus.

The people here say that they have seen
a burrowing lizard which might easily
be Bipes. Their description was quite
confused.

May 11 24.3 mi SE El Refugio, $100 \pm$ ft., $24^{\circ}33'N$, $111^{\circ}35'W$, Baja Calif.

Traveled today through more of the
same country except that the sand was
yellowish. There were also some stunted
mesquites, and shortly the sprawling
cactus called chirimola appeared infrequently.
We crossed the broad river bed at Santa
Domingo, and thereafter found more of
a silty, hard packed sand with many
bare dried mud flats, both small and
large. Saw several caracaras perched
on cardons, but nothing else living but
vultures and ravens on this desolate
plain.

The road has been quite good except for
some sandy places - has been worked
on a little. Made our camp in the
middle of nowhere, 24 miles past Rancho

Murray
1948

60

Journal

May 11 24.3 mi SE El Refugio, 100± ft., 24°33' N, 111°35' W, Baja Calif.
El Refugio.

We are located in a circular bare area surrounded by the same dry vegetation — cholla and pitahaya agria mostly, with cardone, ocotillo, matorra and pitahaya dulce. It is flat as far as the eye can see.

Set my 50 live traps, spaced 60-70 feet apart in the cactus which is fairly dense. There are a few kangaroo rat burrows apparent.

Saw two large bats flying at dusk. Can't imagine where they would live or get water around here without traveling a great distance.

It was a little hotter today than recently, yet not extreme.

May 12 Santa Ana, Arroyo de los Viejos, 25± ft., 24°03' N, 110°58' W, Baja Calif.

Caught 3 ♂, 1 ♀ Dipodomys merriami, 1 ♂, 1 ♀ Dipodomys agilis in the traps. ^(El Refugio) Also taken here were Perognathus arenarius and Perognathus baileyi. Something chewed and opened one of my traps.

This morning we woke up to a rather heavy fog and dew on everything. The minimum temperature was 53°.

Traveled today over poorer road,

Murray
1948

61

Journal

May 12 Santa Ana, Arroyo de los Viejos, 25th St., 24°33'N, 111°35'W, Baja Calif.
having enough rocky or sandy places to slow us up somewhat. Part of the way went along the sea, with a ridge of sand dunes between the road and beach. Stopping at one place near Punta Conejo, saw coyote, rabbit and Perognathus tracks on the dunes. The sand here was extremely fine. Near the sea grew clumps of dulce mangrove.

Arrived at Santa Ana, a nice looking ranch where we ate and then waited for bats at a small pool here. This measured about 8 x 10 feet and was partially surrounded by palm and bamboo. At dusk the bats began to fly down over the pool. A total of 7 Myotis californicus were taken, one shot and the rest netted over the pool. Part of these came after dark as we continued by flashlight. None drank, but perhaps because we kept swinging with nets. The walls of the arroyo here are low but rocky. In it grows much dulce mangrove leading down to the sea a few hundred yards away.

May 13 Same location

A little cooler last night, 52° minimum. Damp but no fog.

Murray
1948

62

Journal

May 13 4 mi N La Paz, S. L., Baja California.

We drove into La Paz hoping to have additional money waiting for us.

However a mixup had occurred and we will have to stay around for several days. Dr. Benson is getting a letter from the governor here similar to the one from the north, which has been the key to numerous courtesies on the trip. Drove north along the beach after dark and camped on the shore.

May 14 Same location

We picked a good spot - so good that the Presidente is having a fine home built right beside us. He was there first so we moved a little way down the beach and set up camp. This is a flat sandy break in the hills which in most places run down to the shore. It is irregularly covered with *salicornia* and a form of *mesembrianthemum*.

The hills are rocky - most small but with several areas of fair sized boulders. There is a very dry growth of *scotillo*, *matacora*, *copale*, *ironwood*, *lumboi*, *candelilla*, a little *mesquite* and some other brush forms, with *cardon*, *cholla*, *pitahaya dulce*, *pitahaya agria*.

Set out 50 live traps on the slope NE of

Murray
1948

63

Journal

May 14 4 mi N La Paz, S.L., Baja California

camp, running first up a small draw and then across a section with numerous boulders. The distance between traps was 50-60 feet. Among these boulders were a number of woodrat nests with droppings present. Set out 7 Schuylers, each in front of such a nest and baited with both dried fruit and a few rolled oats.

In the morning I hunted for lizards. Shot 1 Uta stansburiana in the sand among salicornia. Also shot a Uta (*159) which was unfamiliar but may be nigricauda. This was well up on the rocky hillside, flattened against an ironwood branch. When disturbed it ran along the branch, then jumped to another. I shot at it and missed, after which it appeared running on the trunk of the tree. It made no attempt to leave the tree. While setting out traps I shot a Cnemidophorus hyperythrus among the rocks.

Today I have heard and seen plumbeous gnatcatcher and ash-throated flycatcher, both on the hillside.

It reached 101° today and now in the evening is very warm.

Murray
1948

64

Journal

May 15 4 mi N La Paz, S.L., Baja California

In the mouse traps were 2 imm. ♀ Peromyscus eremicus. The Schuylers caught 1 ♀ Neotoma lepida. One other was sprung, hauled 5 feet and caught in the rocks, after which the occupant must have pulled loose.

Last night we drove about 3 miles back toward town to where there was a round concrete pool full of water. Hoped to find some bats but none appeared. Two flew over camp just before nightfall.

This morning again hunted lizards among the rocks. Shot 1 Cnemidophorus hyperythrus and saw one other with no sign of anything else. Lizards are quite scarce here. While setting traps in late afternoon shot another Uta (♂ 167) which was similar to the last but smaller and duller. Was on the ground but jumped onto the trunk of an ironwood. I have seen several of these after the heat of the day has passed.

From time to time there have been several frigate birds flying high over the water. Also heard cactus wren, white winged dove, gila woodpecker.

Again put out 50 live traps in almost the same place, and 5 Schuylers in woodrat nests.

Murray
1948

65

Journal

May 16 4 mi N La Paz, S.L., Baja California

Caught 1 ♂ *Perognathus squatus* in the traps.

Packed up and left, going into La Paz and then south to Triunfo. Traveled on a good but tooth jarring corduroy road through densely grown country. Here the plants seemed large editions of what we have seen. Pitahaya agria and pitahaya dulce towered 20 feet or more and was greatly branched. Ocotillo, lumbos, matorra and others were trees rather than bushes. There were a number of tall trees over 30 feet high, including guamuchil and Palo zorillo. Found that many of the plants were new to us, of which we identified cacahillo and junco. Saw a caracara on the way. The ironwoods and mesquite still formed much of the ~~plant~~ vegetation, along with palo diablo, which looks much like palo verde. Most of these things were dry and leafless, appearing to be dead. Presumably they will leaf out when it rains. They claim that there hasn't been rain of any consequence for 3 years.

Arriving at Triunfo, we immediately nosed around for bats. The town seems to have once been a fine, well

Murray
1948

66

Journal

May 16

Triunfo, 1700 feet, Baja California
built place, boasting almost all brick
or stone buildings and many improvements
including water pipes and pavement—
all developed by the company which
operated the mine here. However the
company went broke, and the town
collapsed. Now many of the brick
buildings are in various stages of ruin.
In one such compound mostly fallen
down we found a second story room
intact with all but one wall. The walls
were plaster and the roof wood, supported
by wooden beams a number of which were
double. Between these were cracks of
 $\frac{1}{2}$ to $\frac{3}{4}$ inch wide containing bats in
great numbers. Our total catch was
92 Tadarida mexicana and 2 Myotis
velifer, and also 3 Eptesicus fuscus
which appeared from somewhere below.

Also looked in a long mine shaft
but found no bats.

We camped a short distance from town
on the road to San Antonio, under a mesquite
trees and in an arroyo. All around are
rolling hills of rocky soil and covered
with a dry leafless growth of humbol,
copal and other thorny bushes.

Murray
1948

67

Journal

May 16 Triunfo, 1700 ft., Baja California

Along camp runs a sandy wash which is very thickly grown in most places with ramajo ceniza and some other sandy habitat plants. Mesquites are scattered throughout. All the countryside is heavily overgrazed by emaciated cattle from ranches nearby.

Went up the road to set 50 live traps around and in a brush ~~enclosed~~ ^{enclosed} corral. This measured about 150x60 yds and contained a thatched hut and well, with several orange trees. Most was bare sand, save a strip of dense ramajo ceniza along one side and some of it lining the dry brush fence. The sand was a mass of animal tracks, mostly lizard. Saw a young sackrabbit and a Citellus leucurus.

At dusk a number of bats flew, of which the others shot Pipistrellus and Eptesicus. After dark we went to a concrete water trough at the nearby ranch but got only a fleeting glimpse of 2 bats. Caught 2 Bufo punctatus, one in the water, and another at camp after returning. One was full of eggs.

It was quite hot today.

Murray
1948

68

Journal

May 17 Tijuana, 1700 ft., Baja California

In the traps got 2 ♀ Perognathus baileyi,
2 ♂, 2 ♀ Perognathus spinatus.

Animal life seems quite abundant here. Today several times hunted around the area. Shot 2 Citellus leucurus, one running among rocks and the other in bushes. It ran along a branch about a foot off the ground.

The corral in which I set traps has proven to be abounding with life. Saw 2 Citellus leucurus there, and at various times many lizards. There are Callisaurus draconoides and a Sceloporus magister within, and several Cnemidophorus hyperythrus and terrestris living in the brush fence. Mexican ground doves, quail, and a road runner also entered. Perhaps the fact it is ungrazed has some effect. Saw one snake which I couldn't identify with black body and tan head. Might be Coluber flagellum.

Have seen a phainopepla, and a western gnatcatcher around camp. Also heard cactus wrens and a cardinal.

Again set out 50 live traps, this time up the center and along the rocky side of the wash, in deep sand and among ramajo

Murray
1948

69

Journal

May 17 Triunfo, 1700 ft., Baja California
ceniza.

This evening shot 2 Pipistrellus and
2 Eptesicus fuscus. Dr. Benson got
a Dasypus. The Pipistrellus started
flying while it was still bright light and
stopped before dark. Several dove at
me in the manner of those at Rancho
Cadafe. Cloudy today and a little cooler.

May 18 Same location

Failed to mention that yesterday morning
we arose to find that most of the bats had
chewed their way out, leaving us holding
the bag.

Traps caught 3 Perognathus spinatus
(1 ♂, 2 ♀).

Lizards are very common here,
seeming to be out mostly in the morning
before the heat becomes great. Cnemidophorus
hyperythrus is common everywhere, and
Cnemidophorus tessellatus and Callisaurus
draconoides generally along fences.
There are some Leptosaurus dorsalis
of which Dr. Benson shot one and gave it
to me. I shot a Cnemidophorus tessellatus,
which are exceedingly large here.

Today saw a hooded oriole, gila
woodpecker, and heard white-winged dove

Murray
1948

70

Journal

May 18 Triunfo, 1700 ft., Baja California

Set out 50 live traps around the fenced in cornfield of the nearest rancho. Most of it was bare but a wash ran along one side with a somewhat rocky bank above it, and here placed most of the traps. Some were also along the brush fence at one end under some large mesquites.

Bat shooting was slimmer tonight with only a few flying. Shot 1 ♂ Dasypterus ega.

May 19 Same location

The traps held 4 ♂ Perognathus spinatus and 1 ♂ Peromyscus eremicus

Today Dr. Benson went into La Paz to have some work done on the Dodge and pick up our money if it has arrived. In the afternoon Lewis and I went into Triunfo to get bats from the same building as before. Found the supply much diminished and those which were there quite skittish. Caught 10 ♂, 6 ♀ Tadarida mexicana and 1 ♂, 1 ♀ Eptesicus fuscus, which were mixed in with the others. I put them up as alcoholics.

On the way to and from town we passed places where the mesquites were tall and dense, and here saw many birds. There were several Calif. jays, ash-throated

Murray
1948

71

Journal

May 19

Triunfo, 1700 ft., Baja California
flycatcher, and hooded orioles, western
quailcatcher and other birds we have
already seen here.

Set out my 50 live traps irregularly
around the edges of the washes and
somewhat over the defoliated hillside.
Many of them I tried to place in front
of mouse holes in the bank, some with
droppings present. Also set 2 Schuylers.

The Pipistrellus failed to appear this
evening, although the larger bats seemed
about as common as before. Shot 2
Eptesicus fuscus. Twice Eptesicus dove
and circled my head, then flew on.

Tonight went hunting up the washes,
looking mainly for skunks, which
we have been told are common here.
Saw nothing more than a Perognathus
spinatus, for which I set an extra
trap.

May 20

Same location

Caught only 1♂, 1♀ Perognathus spinatus
and 1♂ Peromyscus eremicus. The Schuylers,
set in front of woodrat nests each
caught 1 ~~Dipodomys~~ Neotoma lepida. One
nest was in a group of fairly large granite
rocks, the other a pile of dry brush in the wash.

Journal

May 20 Trujillo, 1700 ft., Baja California

Mammals found here were:

Perognathus spinatus - Commonest mouse but not found in great numbers. Most by along the brush fences of corrals

Perognathus baileyi - Trapped 2 along a brush fence

Peromyscus eremicus - Fairly common, mostly along brush fences.

Neotoma lepida - Caught 2 in 2 traps set in front of nests. Quite abundant.

Citellus leucurus - Very common

Lepus californicus - Saw one in a field.

Thomomys umrevoargentus - Lewis trapped one.

We were told they are numerous.

Pipistrellus hesperis - Common at first in evening.

Eptesicus fuscus - Common flying in evening.

Also took a few in building.

Tadarida mexicana - Found many in one building

Dasypterus sp. - Shot one and Dr. Benson another.

Myotis velifer - Took 2 in a building.

Reptiles found were:

Callisaurus draconoides - very common

Cnemidophorus tessellatus - common

" *hyerpythrus* - "

Sceloporus magister - Saw 2.

Murray
1948

73

Journal

May 20 Trujillo, 1700 ft., Baja California
Uta microscutata - shot one and saw
several, usually late in the day.
Dipsosaurus dorsalis - Saw several
Bufo punctatus - Caught 3. Numerous.
The lizards here were probably more
plentiful than at any other place we have seen.
Also saw one unidentified snake and Ferns
another. Dr. Benson shot a Crotalus Emyo
returning from La Paz
Saw following birds:
Mexican ground dove - many here
Calif. quail - saw several pairs, heard others.
Phainopepla - saw several
Western gnatcatcher - common
Hooded oriole - saw several
Poorwill - heard each night, saw one
Calif. jay - saw several
Cactus wren - heard very often, saw one
Cardinal - heard a few
Gila woodpecker - very common
Caracara - saw a few
Ash-throated flycatcher - saw one
The Mexicans have told us that skunks,
foxes and coyotes are common here.
They also say that snakes are abundant,
though probably just now coming out.

Murray
1948

74

Journal

May 20 / mi E. San Antonio, Baja California

Put up specimens and continued on through hills covered with a feathery growth of Palo blanco and some copals, lumbei and palo verde. At San Antonio we visited a mine with a long horizontal shaft containing a number of bats, but found the way blocked and the bats gone beyond. Did manage to net 3, Macropterus californicus however.

A mile past the town we found a mine well up the steep hillside with a sloping entrance, a couple of side passages, and then a very deep and steeply inclined shaft going down. As we first approached, saw many bats flying in the entering passage. Trapped a number of them in the two branches, mostly Macropterus californicus and a few of what we believe to be Septonictes. Then Dr. Benson descended into the shaft, from which we could hear a roar of wing beats from hundreds of bats. Many of these he drove upward and we trapped and caught them with a large net stretched over the mouth of one passage. The shaft turned out to have another entrance at road level. Many bats which had been

Murray
1948

75

Journal

May 20 6 mi ESE San Antonio, 1200 ft, Baja California
driven out there flew in at our end.
It would be impossible to accurately
estimate the number present but it was
enormous for one bat location.

We drove on a few more miles and camped
for the night beside the road. Many of
the bats caught died from being packed
into sacks.

Heard elf owls tonight and Gust
shot 2.

May 21 Same location.

Put up 20 Macrotus californicus and
20 Leptoncyrtis among us, released some
and discarded others. When we awoke this
morning just after dawn there was a
loud chorus of white-winged dove calls,
with some gila woodpeckers also.

Drove on through about the same
kind of country, some of it rather flat,
and dominated by lumboi, Palo Brazil,
copals and other dry bushy plants. Came
to Buena Vista on the coast where we made
camp under some mesquites at the Rancho
Buena Vista. Working in this locality is
William? Massey of the University
archeology department. We had already
met him when we were at Triunfo.

Murray
1948

76

Journal

May 21 Buena Vista, $25^{\circ}\pm$ ft., $23^{\circ}38'N$, $109^{\circ}41'W$, Baja Calif.
In the evening, watching for bats, did not see the usual Pipistrelles, and but few of any kind. All flew rather late, almost when dark. Shot 1 ♀ Myotis velifer. Later we went up to see Massey and his family where they are staying in the school house. There caught 3 Macrotes californicus which flew into one of the rooms at various times.

May 22 Same location

This morning we drove to Cerro Agua Amarga, 4 mi to the SE around the shore. Here, with Massey and a couple of Mexicans looked for bat caves which they knew about. This hill is very rocky with much of its surface outcroppings of sandstone and a coarser gravelly sedimentary rock. There were many caverns washed out of the rock. One cave extended back about 35 feet, 20 feet across, and 10 high. It contained many bats - 300 or more, which were all Macrotes californicus except one lone Leptonycteris. We spread nets over the mouth and screened them through to be sure of the species. There was some guano on the floor, and it had been dug out in the past. 18♂ and 12♀ Macrotes were kept as

Murray
1948

77

Journal

May 22 Buena Vista, $25^{\circ}44'N$, $23^{\circ}38'N$, $109^{\circ}41'W$, Baja Calif.
2 skulls only, cataloged by Tevis and myself.

We saw several other caves, one a little shallower and higher had several Macrotus, but the others did not amount to much. There was some Bassanus dropping in several places. Much of the higher overhanging rock had a strange honeycombed appearance, apparently from water dripping through. The hill slopes were covered with dry palo verde, mesquite, frutilla, humbol and the other brush found down here. I identified Palo brasil as another bush here. There are 3 species of Elaphrium or copal which have been prevalent since La Paz.

The road to the hill passes through much very dense growth of mesquite and palo verde. In the washes are yerba de lapasma, which was also very common where I trapped at Triunfo.

I was not able to shoot any bats tonight. Several appeared rather late and flew rapidly straight down the road. These were not feeding - several dove at me as they went by. Quast netted 2 Myotis californicus in the house.

Murray
1948

78

Journal

May 22 Buena Vista, $25 \pm$ ft., $23^{\circ}38'N$, $109^{\circ}41'W$, Baja Calif.

Set out 50 live traps along the brush fence which encloses a plowed sandy field near here. This was about 125×175 yds. contained 1 windmill and a concrete water tank. The whole thing is in a broad sandy wash with brush near but not affording much cover by the fence, while the inside is bare except for a little corn in the center. Had most of the traps on the outside, a few inside. Saw several Callisaurus

May 23 Same location

Traps caught 4 Perognathus spinatus

There are two cactus wren nests close to camp in the large mesquites. The birds "sing" loudly and constantly all day. White-winged doves and Mexican ground doves are very common here. Also have seen plumbeous quailcatcher.

Last night was a brilliant moonlit night, as has been for the last several nights. This probably has affected the trapping here and at Trindfo.

Along the sandy beach by camp grow small palo verdes, lumboi, mesquite, and cholla. Citellus leucurus is quite common here and also on the hillsides.

0

0

Murray
1948

79

Journal

May 23 Buena Vista, 25th H., 23°38'N, 104°41'W, Baja Calif.
Shot 1 ♀. Callisaurus draconoides is
thick here and exceedingly tame. Also
saw some Dipsosaurus dorsalis, and
Uta microscutatus late in the evening.

Shot 2 ♀ Eptesicus fuscus in the evening.
The bats flying here seem to follow a pattern,
with the Myotis flying at early dusk, feeding
over the brush beside the road where I
stand. Later, when it is much darker,
the Eptesicus, and whatever other large
bats there are come straight and fast down
the road, so consistently that it must amount
to a pathway.

May 24 Same location to Las Cuevas

On our way again, driving the
short distance to Las Cuevas. Here
found a crude town of thatched huts
overlooking a broad river bed with
high, sheer, solid sandstone cliffs.
On the far side we found a large
cave washed out of the base of the
cliff, with aid of 19 Mexicans. This
had two main chambers at tandem,
the first about 30 ft. high, and the
other more than 20. Total depth was
around 120 ft. At the rear and high on
the wall was a solid mass of Myotis

Murray
1948

80

Journal

May 24 Las Cuevas, $23^{\circ}34'N$, $109^{\circ}39'W$, Baja Calif.

velifer, packed so tightly that none of the wall showed through. We estimated very roughly that 60 square feet were so covered. In one crevice were many Natalus mexicanus, packed tightly, and hung on the roof was another small clump of the same kind. Also on the roof were a few Macrotus californicus, grouped together but closely surrounded by Myotis. All were very inactive. It was necessary to scrape with a net to get the bats off of the wall, and to poke vigorously in the crevice. Those which fell on the ground began to crawl rather than fly. Later they became more active and excited, and began a loud chorus of chittering where there were but a few sounds before. A few began to fly restlessly about, and then quite a number when stirred up by the net. By then they struggled and tried to bite when caught and flew away readily. The temperature in the cave was fairly low for those which we have seen. The floor was thickly covered with dust and guano. Estimated the total number 15000. A short distance away we looked into

Murray
1948

81

Journal

May 24 Las Cuevas, $23^{\circ}34'N$, $109^{\circ}39'W$, Baja Calif.
another, very large cave, with a domed high chamber and then a passage tapering back. At the rear were many Macroton californicus, apparently the only species present.

We caught a total of 53 Natalus mexicanus mostly females, and 27 Myotis velifer.

Traveling west, drove up a gentle flat slope of the usual dry brush to a place called El Carrizalito. Here is a large partly completed building which was meant to be a tuberculosis sanitarium until work stopped years ago. As it stands, is brick and plaster walls without completed doors or windows, and watched by a caretaker. He is permitting us to camp in a part of the ground floor.

May 24 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.

At this location we look out over a great expanse of the countryside, mostly flat and cut by the Arroyo Santiago running out to the sea just visible in the east. Nearer and to the west the Arroyo Dionisio joins it. There is a steep hillside just above us, thickly bristling with large granite boulders. The vegetation is

Murray
1948

82

Journal

May 24 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.
varied and much of it green, with a number of unfamiliar forms. Found much wild fig, and copal, lumboi, palo blanco, mesquite, with several groups of tall palm trees. Here and there are pitahaya dulce and pitahaya agria. Near the building are several large palo escopeto and bearing mangos. Well up on the hill is a fancy house for the physicians, apparently finished but never used. Near it is a spring from which water is piped to two tanks at the bottom. Two families live here and grow a few crops.

At dusk we found a number of bats flying. Most were pipistrelles, with a few larger. Shot 1 ♀ Dasypterus ega, 1 ♂ 1 ♀ Eptesicus fuscus. After dark came into the building and found 6 Antrozous minor hanging in a clump in a doorway. There were also several hanging in the high corner of the stairway. This and the other corner proved to be favorite spots for them and several times some returned after being driven away. Single bats appeared in 3 small rooms downstairs and there were droppings where they must have hung. They also flew around the

Murray
1948

83

Journal

May 24 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.
halls and in one room upstairs. All seemed
stupid and unresponsive and sometimes
permitted a net to be pounded over them
without moving. I caught 2 ♂ 1 ♀ and Quast
and Dr. Benson 4 each. In one small
downstairs room there were several
Macrotes californicus which shrewdly
eluded capture through the door and
two small windows. Lewis caught about
15 Pipistrellus hesperus and Myotis
californicus with a net over one of
the water tanks.

We worked late putting up the Natalus.

May 25 Same location

Worked on bats most of the day, then
set out 13 Schuyler traps for skunk and
Bassariscus which are supposed to be
plentiful here. Saw no sign however. There
were a number of woodrat nests which
I avoided for the most part. All the traps
were among the large rocks on the hillside,
mostly in a small draw. Saw hooded orioles,
plumbeous gnatcatcher, Mexican ground doves.

This evening tried out a net at the bottom
water tank. It is 10 feet across, almost
flush with the ground on the upper side
and about $1\frac{1}{2}$ ft. high on the lower side

Murray
1948

84

Journal

May 25 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.

Made of concrete with water within an inch of the top. Large boulders enclose it and a brushy fence is just below.

Bats were flying around it when I arrived ~~at~~ in early dusk. Most were drinking, coming in low consistently from two directions which were most open. Few stopped to feed though they could be seen feeding a short distance away. They very distinctly came in waves, 6-10 at a time though some might have circled back again. However there weren't of ten more than 2 or 3 over the pool at one instant. These did not necessarily come from the same direction. Then came a lapse of 1 or 2 minutes during which very few single bats came, and another group would arrive. While still daylight I caught only pipistrelles and Myotis. After it became dark I used a flashlight to light up the pool which did not seem to bother them in the slightest. The numbers tapered off a little after it had been dark for a little while. At about 7:45 I caught a Lasiurus borealis. By 8:00 the pipistrelles were still coming around. After this time the bats were noticeably

Murray
1948

85

Journal

May 25 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.
fewer, but still came in several at a time. By then were not drinking as much as before and often flew several feet above the water. Two flash lights shining over the pool did not seem to disturb them, but a Coleman lantern nearby drove them away. Placing the lantern about 15 feet up the hill gave bright illumination, yet the bats flew up readily.

Found Bufo punctatus very common around the pool and also all over on the ground. Near the water they sang lustily, swam, and perched on the side. Several were mating. They had arrived from all directions well before dark. I slowly advanced my finger toward one on the edge and it leaped onto it, repeating the reaction several times in a row. This I wasn't sure I could interpret.

Returning to the building found just a few bats, and these more excitable. Caught 1 Antrozous in an upstairs room and 1 flying back and forth in the hall. My total catch at the pool was 1 ♀ Myotis volans, 1 ♀ Lasurus borealis, 1 ♀ Eptesicus fuscus, 2 ♂ 3 ♀ Myotis californicus, 7 ♀ Pipistrellus hesperus.

Murray
1948

86

Journal

May 26 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.
Caught 1 young ♂ *Neotoma lepida* in the
Schuyler which was discarded. The others
were untouched.

Last night Lewis netted 3 Corynorhinus
at the upper pool; a new record for this
area.

Again put up bats all day.

This evening went to the upper pool,
but found the bats far fewer, which was
also true of the other location. None attempted
to drink; rather seemed to feed several feet
above. Often they would circle away and
back several times. Usually there was
a single bat, sometimes 2 or 3, with
an interval of several minutes between.
Even Pipistrellus didn't arrive at the
tank until 7:10 and began to fly later
than usual. Saw one very large bat at
about 7:30. There seems to be nothing in
the circumstances to explain the differential
other than the possibility of reducing
the population or frightening them away
from here. Caught only 1 ♀ Pipistrellus
hesperus, 1 ♀ Myotis californicus. Dr. Benson
caught one more Corynorhinus at the
other tank. The others got a few more
Antrozous in the building.

Murray
1948

87

Journal

May 27 El Carinjalito, 1400 ft., 5 mi N Santiago, Baja Calif.
Spent most of the day packing specimens and taking care of various items.

This evening returned to the lower water tank. Saw the first bat, a pistolrelle, at 6:50, but almost none for another 15 minutes. Then they started arriving at the pool one at a time and infrequently. After it became dark however there were a few more than the previous night. A few times 3 or 4 would come in at a time. Most were drinking at first, but few if any after about 8:00. At 7:30 caught a Corynorhinus rafinesquii which arrived with two others. This confirms what Lewis and Dr. Benson had observed the previous times. A number of the bats later were circling and crossing over several times, usually at the same height each time; some high, some low. Caught 6 ♀ Pipistrellus hesperus, 2 ♀ Myotis californicus. Released the pipistrelles and lost 1 californicus.

Returned to the building at 9:00 and looked for Antrozous. Caught 3 over a period of time by netting them as they flew. Then found a new hanging place on the 2nd floor under the staircase going up, about 11 feet high. Eventually

Murray
1948

88

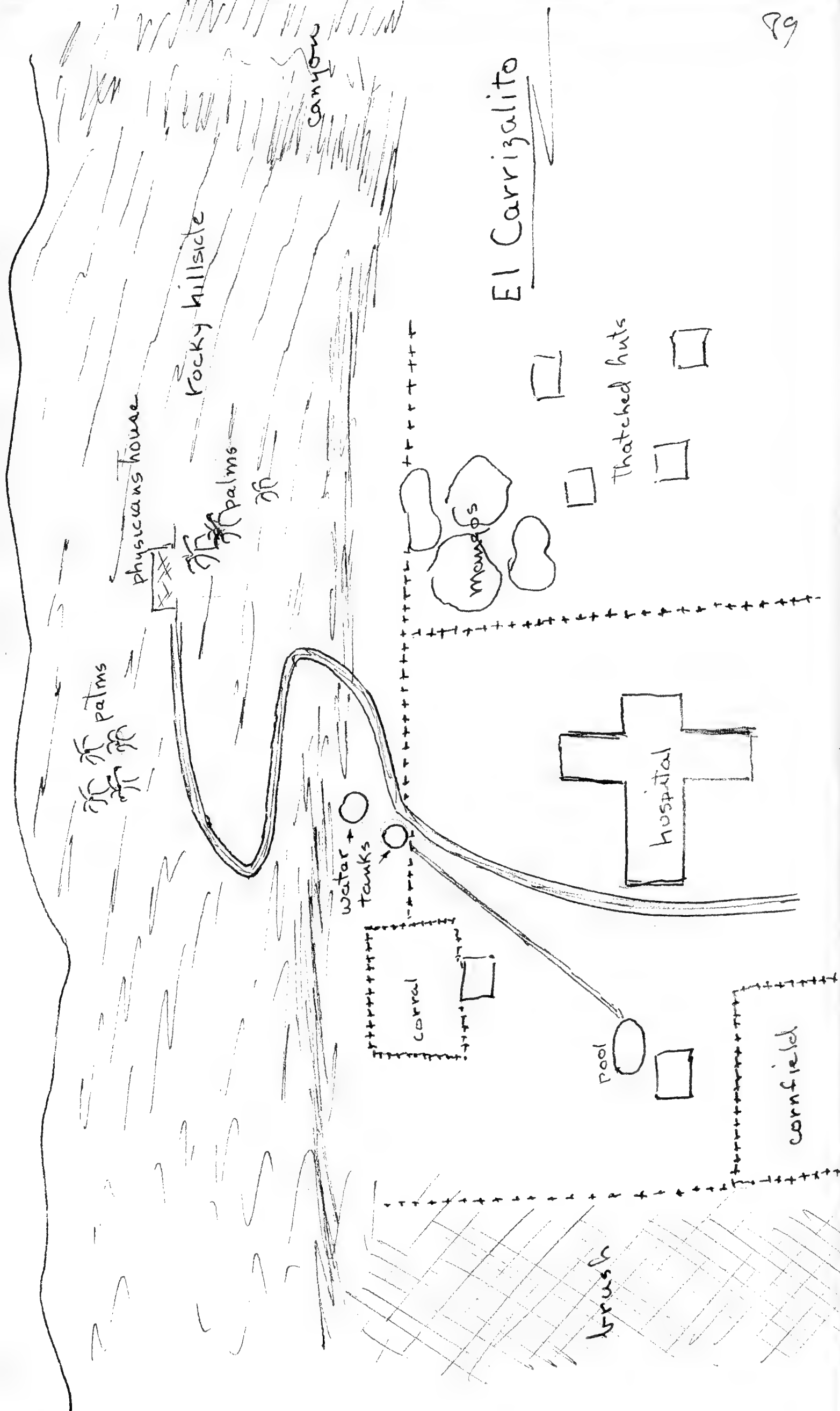
Journal

May 27 El Carrizalito, 1400ft., 5 mi N Santiago, Baja Calif.
caught 2 more here, and later Dr. Benson
took several more (See species account)

May 28 ~~Same location~~

This morning we went chasing off
over the hill in search of a cave with
bats. Found the cave but no bats nor
even a good prospect. In the course of
the walk saw some interesting country
though. Almost all of it was very thick
growth of the usual sort - lumber, copals,
palo blanco, palo de arco, mesquite etc.,
but much of the usually dry bushes were
partially leaved out. Also identified
cacachilo and palo colorado. Going
up a canyon of rocky boulders there
were many wild figs also, and what
the Mexicans called sage. Saw several
Cnemidophorus hyperythrus, a Cnemidophorus
tesselatus, Dipsosaurus dorsalis among
the bushes and a Sceloporus magister on
the rocks in the canyon. Also saw a
cardinal.

In the evening I saw the first bat,
undoubtedly a pipistrelle, at the same time,
6:50. Then there were no more for another
15 minutes. Found them fewer tonight
than ever, stationed at the lower pool



El Carrizalito

palm

physicians house

Rocky hillside

palm

canyon

water tanks

corral

pool

hospital

thatched huts

mounds

brush

cornfield

Murray
1948

90

Journal

May 28 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.
again. Almost all came in alone, a few
in pairs. Some drank early, then were
inclined to fly high. Often the same bat
would come by in exactly the same place
several times (as many as 6), circling back
somewhere in the darkness. In general
they were more wary tonight, and often
turned away before coming into the light
or flew across above the light or behind
me. Caught 4 ♀ Pipistrellus hesperus (Kept 1),
2 Myotis californicus, 1 ♀ Myotis velifer, 1 ♀ Eptesicus
fuscus. Took the last pipistrelle at 8:00.

There are many very young Bufo punctatus
at the pool while it is still very light each night.
They seem to disappear well before dark.
The older toads arrive at about 7:25, almost
all at once, though did not sing much for
another 15 minutes. Then began a loud chorus.

May 29 El Chorro, 800 ± ft., 2 mi W Agua Caliente (Cape District)

After lunch we drove to Agua Caliente
and then west past some prosperous
looking ranches to the dam from which
water supplies the area. Here too is the warm
spring for which the town was named. Small
concrete boxes now hold the water which
is comfortably warm. The dam holds
a pond of about 60 by 120 feet, and allows

Murray
1948

91

Journal

May 29 El Chorro, 2 mi W Agua Caliente, 8000' H. (Cape District)
a steady flow to pass in a concrete trough
down the canyon. From this point upward,
running NW, the canyon runs between high
hills and is very rocky. It is called Canyon
del Saucé. A little higher the mountains
are called Sierra San Rafael. Below us
the canyon broadens out and the wash
is covered with medium sized granite rocks.
Growing there is mesquite, palo blanco,
palo verde, yerba de la pasma and some
large oaks, of which we also saw a number
on the way here. Above us (north) towers
a very steep brush covered cliff and hillside.

The bats started flying early here, both the
Pipistrellus and larger ones. All were
coming down off the hillsides, mostly
down the canyon, and most flying high.
They flew straight until some distance
below our camp. Then the Pipistrellus began
to feed while the big bats sometimes dove
a few times on their way, but remained
quite high. Shot 1♂ Dasypterus egi, 1♂ Pipistrellus
hesperus. Dr. Benson shot 4 Ladainda femorosa
farther up, which is apparently what many
of the larger bats with narrow wings were.
Also several other Dasypterus were taken

Murray
1948

92

Journal

May 30 El Chorro, 8000± ft. 2 mi W Aguacaliente (Cape District) Baja Calif.

~~Today went~~ Last night had put out 20 live traps late in the evening along the rocky bank next to the road. However none were occupied.

Today went hunting snakes and lizards in the rocky wash. There were a scattering of large granite boulders among the many others and on these saw several Sceloporus magister and Streptosaurus thalassina. Cnemidophorus hyperythrus was fairly numerous in both the wash and hillside. Saw several Callisaurus draconoides in more open sandy places. Cnemidophorus maximus is the most common lizard and appears just about everywhere. One side of the wash was thickly grown with Palo verde and had leaves and dead branches lying on the ground. Trubbed around here for skinks but saw none. Was able to find no snakes. Urosaurus microscutatus was numerous on tree limbs and bushes.

In the evening went several hundred feet up the canyon to shoot bats. They began to fly in numbers at about 6:40, all very high and all flying downward off the hills. After a while some came low enough to shoot at. Many congregated about a sharp ridge high on the slope above us, circling around it. We could pick out the Tadanda

Murray
1948

93

Journal

May 30 | El Chorro, 800±ft., 2 mi W Agua Caliente
femorosacca, flying fast and with narrow wings. They also had a hunched forward appearance to the shoulders. The other large bats were Dasypterus, flying a little slower and with broader wings. Later on some of the bats began to fly back up the canyon. Also a number of them circled around over the pool at the dam, mixing with the very numerous violet-green swallows. Shot 2 ♀ Tadarida femorosacca and 2 ♂, 1 ♀ Dasypterus ega.

May 31 | Santa Anita, 250±ft., (Caped District), Baja Calif.

Put up our specimens and left after lunch.

Should mention that Hyla regilla are very common on the muddy and grassy area which drains the hot springs, throughout the day. Also saw several Bufo punctatus.

Drove to Santa Anita over the usual dry brushy terrain and sandy soil. Here we found a group of ranches and one tropical looking part of dense palms, bananas, mesquites, and other green trees. There was a thick growth beneath of sudan grass or something similar and through the whole thing ran a small ditch of water, supposedly the only open water in the vicinity. Bats began flying at 6:40 and the first

Murray
1948

94

Journal

May 31 Santa Anita, 250± ft., (Cape District) Baja Calif.
few were Dasyples which for once beat
the pipistrelles out. Most of the bats we
saw arrived from the N or NW; could
have come from palms and heavy growth
which extended in that direction. All the
larger bats flew fairly high and over us
toward the water. Pipistrelles and Myotis
soon began to feed all around. We
were shooting in a bare cornfield
adjoining the water. Several Tadarida
femorosacca flew over. Shot 3 ♀ Dasyples
ega and 1 Myotis velifer which was lost.

This afternoon we looked into an
empty building and found a group of
Myotis velifer hanging in a corner and
living in a crack there. Probably all the
Myotis flying in the evening were velifer
There was also a Macrotus californicus
in the building in another room.

Spent the night at one of the ranches here.

June 1 6 mi N San José del Cabo, 250± ft., Baja Calif.

Today we drove into San José del Cabo
to have tires fixed, get supplies, etc. Then
in the afternoon returned to the site of
a cave we had looked into on the way.
This was located at the base of a small
sandstone hillside and extended narrowly

Journal

June 1 6 mi N San José del Cabo, 2560± ft., Baja Calif.
back about 30 feet. In it were roughly
20 of the inevitable Macrotus californicus.

Our camp is located nearby on the
broad sandy flat. Close to the hill is
a spring and a ditch about 4 feet wide
running several hundred feet. Much
of the area is thickly covered with yerba
de la puma and ramajo ceniza. There are
some quamuchil trees and a few palms.
They call this hill San Pedro, and far
to the west is Sierra San Lazaro.

During bat shooting this evening found
them moderately numerous. Dasypterus
began to fly first, coming straight and
rather low. I saw one circle around very
low and enter the dried hanging leaves of
a small palm tree at a level of about 8 feet.
Poked in the leaves and shot it as it flew
away, all this occurring at 6:55, shortly
after the bats had started to fly. Pipistrellus
and Myotis velifer appeared a little later.
Shot a total of 1♀, 1♂ Dasypterus ega, 1♀ Myotis
velifer, 1♀ Tadarida mexicana.

June 2 Same location

This morning Dr. Benson scared out
about a dozen Dasypterus ega from the
palm trees nearby, thus giving excellent

Murray
1948

96

Journal

June 2 6 mi N San José del Cabo, 250± ft., Baja Calif.
evidence of where they live. I shot one.

In the afternoon Dr. Benson and Feis went to look at a bat cave. I put out 10 gopher traps. 5 of these were in the sand near camp, where a number of mounds were present. It was difficult to tell which were fresh. The other 5 were in a corn field with tall rows of corn growing. Parts of the field were well irrigated and it was here that several fresh workings were found in which I set the 5 other traps.

We are not shooting any more bats here as long as they are the now common species.

Put out 50 live traps in the sand near camp. Part were bordering the patches of ramajo ceniza and other shrubs, and the rest among scattered bushes or dry brush piles.

The weather here and in this vicinity has been quite humid, with occasional clouds. The maximum daytime temperatures run around 90°

June 3 Same location

In the live traps caught 3♂, 2♀ Perognathus spuriatus, 1♀ Dipodomys merriami. Most of these were among the scattered bushes and the dry brush piles.

Journal

June 3 6 mi N San José del Cabo, 2500± ft., Baja Calif.

Yesterday Dr. Benson and Tevis caught our first Balantiopteryx plicata in the cave (see their notes). Got a total of about 70

The gopher traps in the cornfield produced one in the morning and two more in the afternoon, all males.

I have seen several Dipsosaurus dorsalis, Cnemidophorus maximus, Urosaurus microscutatus here, also a Sceloporus magister on a brush pile. The Dipsosaurus are quite tame and permit one to approach carefully within a foot of them. Last night Tevis caught 2 Coleonyx variegatus in the cave which we originally looked into.

Birds here are numerous, with many Cardinals, White winged doves, Mexican ground doves. Have also seen Calif jays, hooded oriole, western ^{gnat}catcher, 3 pair Calif. Quail, cactus wrens

June 4 Same location

Caught nothing more in the gopher traps but found that a fox had pulled one trap out and left no more than a few hairs. Tevis has caught 1 Urocyon cinereoargenteus last night and 1 the night before, while Dr. Benson caught 1 last night - all in steel traps. We have been told that skunks are common.

Murray
1948

98

Journal

June 4 6 mi N San José del Cabo, 250± ft., Baja Calif.

Packed up to leave, then went up the hill to look in a crack where Dr. Benson had seen bats enter early in the morning. Found a large rounded granite outcropping and on its outer side an exfoliating sheet which left a crack of about $\frac{3}{4}$ " in between. Prying it off, we found about 10 bats. Several of these proved to be Myotis velifer, 2 may have been Tadarida mexicana, and 1 was Tadarida ferox which we kept. Found that the crack was largely filled with guano. Apparently the bats have been driving themselves out of their home in the course of time, and now there is space for only a few.

Drove back into San José del Cabo where spent most of the time writing notes. In the evening at 7:00 a group of bats suddenly flew out from behind a metal sign on a building next to the plaza.

We were quite sure they were Tadarida mexicana. At first about 30 burst forth together as if by signal. Most went off in the same direction with fast irregular flight, while a few strayed in other directions. A few moments later 3 more came out, and about a minute later 3 more.

Murray
1948

Journal

June 5 9 mi S W San José de Cabo, 3000± ft., Baja Calif.

After camping for the night just out of town, we drove on to El Tule, where we were told of a bat cave a little further on. Found this to be at a distance of 9 miles from San José del Cabo, and over the rough granitic hills which bordered the ocean. The cave was near the water, at the base of much washed granite cliffs. It extended back about 100 feet.

Murray
1948

99

Journal

June 5 9 mi SW San José del Cabo, Baja Calif. (3000 ft.)

After camping for the night just out of town, we continued on to a point 9 mi beyond, where a Mexican took us up to a cave well up on the hillside. Found this to be about ~~30~~¹⁵ feet deep and 12 high, apparently washed out of the granite in the past. At the rear was a pothole in the ceiling and here hung several Balantiopteryx plicata. These were active and ready to fly and we netted only 4. The rest circled around outside in rapid flight, a few trying to re-enter. The total number was more than 15.

Continued on to El Tule, where were told of another cave. This was about a mile farther, and over the rough granite hill which bordered the ocean. Irregular, much washed cliffs were along the shore, and the cave was washed out of the base. It extended back about 100 feet, and 10 feet high. There were no bats present, but guano had been taken out recently and there were some fresh droppings. Also saw several wings of sphinx moths. Climbing back over the hill, I looked into numerous crevices and small caverns in the granite outcroppings. Saw only a few droppings, probably the places used as night hanging spots. Tevis

Murray
1948

100

Journal

June 5 1 mi N Cabo San Lucas, Baja California
looked into one cave above the first,
where there were a number of Balaniopteryx.

Drove on to Cabo San Lucas, where we
made camp by the road not far from
town. At dusk watched for bats in an
open field. A lot of Balaniopteryx were flying,
of which I shot 1 ♀. There were also pipistrelles,
possibly Dasypterus, and a few Tadarida
femorosa, Quast shooting 3 of these.

June 6 Same location

This camp is under a large mesquite, and
beside a ditch in which water runs only
part of the time when pumped. There is
a lot of what was called yerba de la pasma,
but now romaillo. Many birds are here.

Have heard and seen cardinals, a pair of
Le Contes thrashers, a flicker, probably gilded,
a cactus wren, linnets, several Xanthus
hummingbirds. One of the hummingbirds
came into camp to investigate some tomatoes
lying on a box. There are also the usual
white-winged doves, Mexican ground doves,
caracaras, and more turkey vultures than
I have seen before.

It is cloudy today and was yesterday,
threatening to rain and even sprinkling
a few drops. Also quite humid.

Murray
1948

101

Journal

June 6 Punta Gasparina, $23^{\circ}16'N$, $110^{\circ}09'W$, 10±ft., Baja Calif.

We drove on to the above location, over a little used and much washed road. Many spots did not look as though they would last through another rain. Much of the time passed up over small rolling mountains and near the last were near the ocean. The vegetation was as usual, though parts were lower and scrubbier.

Our camp is in a broad wash near the beach, at the edge where a low hill slope meets it. This has a short growth of lumbei, ocotillo, dulce mangrove, pitahaya, and some other shrubs. It is mostly soft sand. In the wash itself grows some dense thickets of romarillo, and another common wash plant, mostly concentrated along the edge.

Set out 100 live traps, half around the edges of growth in the wash, and the other half on the slope in fairly thin vegetation and mostly soft sand.

Saw only 1 small bat in the evening.

June 7 Same location

The traps in the wash caught 2 ♂ Perognathus arenarius, while those on the hill had 3 ♂ Perognathus arenarius and 4 ♀ Perognathus spinatus

Murray
1948

102

Journal

June 7 Punta Gasparina, $23^{\circ}16'N$, $110^{\circ}09'W$, 10 ft., Baja Calif.

After putting up specimens, Dr. Benson, Fevis and I back-tracked to a cave which a nearby rancher told us about. This was back up the road about 5 miles, then down a wash called Arroyo de la Tenaja to Cerro del Elote. The hill faced the seashore and was heavily washed and cut on that side, into the solid granite rock. The cave was back about 100 feet from the water, with a great cut in the rocks at least 15 feet across and with cliffs 60 feet high leading into it. From where the roof began the cave extended back as a broad crack at a 70° angle roughly, and from 3 to 5 feet wide, 150 feet long and 30 ft. at the highest point. Toward the rear a mixture of sand and guano caused the floor to slope steeply upward.

There were only about 8 or 10 Leptonycteris in it, and these hanging in a shallow crevice at the rear. They flew readily, some leaving and others flying around inside. Dr. Benson shot 2 and he and Fevis netted 1 each. Several flew around the rocks outside, trying to re-enter. They often soared briefly.
(See sp. acc't.)

Murray
1949

103

Journal

June 7 La Tenaja, 5 mi SE Punta Gasparina (Cape Dist) Baja Calif.

After putting up specimens and eating, Dr. Benson, Lewis and I rushed back to another location we had heard about, this time up the same Canyon de la Tenaja to the water hole for which it was named. Here a road went up into the hills a short distance, ending at an old ranch house. The stream bed was full of granite boulders and green bushes, mesquite and others. The water was brackish and dirty, comprising two small pools linked by a short flow. The lower was a little larger, about 3 x 6 feet.

At dusk several bats were flying, apparently pipistrellus, for I shot 2. When almost dark some Natalus mexicanus appeared at the pool. There were never more than 3 at once, and usually just 1. It would appear briefly and leave, then return or be replaced by another. Almost always flew very low, within 2 or 3 inches of the ground, and crossing rapidly over the water or among the bushes. They were skillful fliers and very elusive. Was only able to net one in the course of considerable effort.

Before the bats came out I set 50 live traps along both sides of a sandy

Murray
1948

104

Journal

June 7 La Tenaja, 5 mi SE Punta Gasparina (Cape Dist.) Baja Calif. Draw. The banks were mostly covered with lunboe and ocotillo, and some other kinds on hard slightly rocky soil.

June 8 Same location

The live traps caught 1♂, 1♀ Perognathus sparatus. There several quail around here, roosting in the bushes near us. Last night there were night hawks

We returned to our camp at Punta Gasparina and then were on our way. Drove to Todos Santos and inquired about packing up into the Victorias at La Laguna. We were told of a ranch at the base of the mountains where animals could be obtained. After driving there, arriving late in the evening, we were informed by the ranch owner that he could round up animals and probably be ready to start the day after tomorrow.

June 9 San Juan de la Serradera, 1600± ft., W base Sierra Laguna

This morning the man told us that one mule owner was in Todos Santos and his permission must be obtained, so Dr. Benson drove him into town. The rest of us spent most of the day packing specimens. In the afternoon I went out hunting lizards, first in a rocky sandy wash. This was unproductive

Murray
1948

105

Journal

June 9 San Juan de la Serradera, 1600' H., W base Sierra Laguna
as I saw only a Cnemidophorus maximus
and a couple of Callisaurus. In the bushy
ground next to the wash there was mostly
lumbos, copal and others, with blooming
palo zorrillo to give color to the parched
landscape. Much of the ground was covered
with dried leaves. Lizards were scarce
here also. Saw several Cnemidophorus
hyperythrus and shot 1. All the lizards seem
more timid here. Callisaurus draconoides
rushes off in a manner more like the
northern ones, although the ones that
I watched would repeatedly hide under a bush,
then rush off again when chased. Saw several
Cnemidophorus maximus but couldn't get
within 20 feet of any. These seemed to stay
put when they hid. Found a few Urosaurus
microscutatus later in the afternoon when
it was a little cooler. Shot 1 and also
1 Callisaurus. The latter were largely
in not too thick brush with leafy ground.

In the evening found bats pretty scarce.
They apparently were mostly Eptesicus.

June 10 Same location to La Laguna

In the morning they had to finish rounding
up the mules and we did not get started
until 10 A.M. The trail did not prove

Murray
1948

106

Journal

June 10 La Laguna, 6200±ft, Sierra de la Laguna, Baja Calif.
difficult, though a steep ascent. The vegetation was the same old dry brush with a few cardons and pitahayas mixed in until almost halfway. Then the oaks started suddenly along with a frequent leafy bush. A little more than half way our Mexican guides, of which there turned out to be three, showed a small spring in the canyon below from which a little muddy water could be obtained.

The long awaited pines also appeared suddenly, not so very far from the top, so that the elevation must have been just under 6,000 feet. They and the oaks formed increasingly heavy vegetation, until at the top it was quite dense. Descending more gently down into the valley, madrones appeared and there were other green bushes, all forming deep shade over the trail. Then it flattened out as we emerged into an open area with two pools of water. This was the western end of the valley, and we headed SE to where the open part began and then broadened out. We camped on the SW side of this part of the valley, near a small running stream.

The Laguna itself is bare except for

Murray
1948

107

Journal

June 10 La Laguna, 6200±ft., Sierra de la Laguna, Baja Calif.
a few oaks and a sparse covering of weeds, dried grass and a little green grass along the stream which courses as a thin ribbon down the center and out to the east. It and the valley bend somewhat just before this point.

On all sides are small rounded hillsides covered quite thickly with fairly small pinon pines and a great many oaks. There is madrone and some other kinds of green bushes and trees.

The nearby stream is small, and runs gently from pool to pool. Its banks are heavily grown with oaks and others, with some large willows. Along it set 42 Museum Special mouse traps, very close together and near the water, hoping to catch the rare shrew which has been taken in this locality. Baited them with walnut.

In the evening waited for bats in the center of the Laguna. They were later here, the first appearing at 7:25, and not common at any time. Most appeared to be Eptesicus, some were Myotis or pipistrelle size, and one was large.

Promptly at 7:30 the night life seemed to begin here. A poorwill called, and some

Murray
1948

108

Journal

June 10 La Laguna, 6200± ft., Sierra de la Laguna, Baja Calif.
nighthawks began to fly. I heard two different
kinds of owls hoot. Throughout the evening
several killdeer were flying and calling
in the open space.

June 11 Same location

Did catch 1♂ Sorex ornatus lagunae in a
space hollowed out of the stream bank beside
the water. The spot was partially covered
by overhanging plants and had many dried
leaves around. This was in one of the
densely wooded parts of the stream, shaded
by overhanging oaks. Also caught 1♂ Peromyscus
eremicus and another Peromyscus with
its head chewed off.

A little later I went out to look at the
birds, going first up the stream quite a
distance, then across the hill SE and up
another canyon which has some water.

Most striking are the band-tailed pigeons,
flying with noisy wing beats and crashing
in the trees. A little less common are
mourning doves and white-winged doves.
Saw several Xantus hummingbirds which
are exceedingly tame. They would come
within a foot or two of my head, and fairly
close even when I was moving. They feed
on red flowers which grow along the stream.

Murray
1948

109

Journal

June 11 La Laguna, 6200[±] ft., Sierra de la Laguna, Baja Calif.
Saw one bathe in a shallow pool.

Spotted Towhees are abundant here and are almost always to be seen in pairs - spend a lot of time scratching vigorously in the thick oak leaves covering the ground. Juncos are easily the most common birds, and very tame as all the others noticeably are. (See spec.)

Also saw a vireo, probably solitary, some robins, Calif woodpeckers, an Empidonax flycatcher, a white-breasted nuthatch on an oak by the stream. There were 3 bush-tits, and in the evening a flock of 15 or 20, also a pair of plain titmice and a western gnatcatcher. A red-tailed hawk soared overhead along with some ravens and a number of vultures. There was a small group of violet-green swallows flying first high above the hillside and later out in the open.

Of reptiles have seen nothing more than a Urosaurus microscutatus and a Streptosaurus thalassina on a rock.

In the afternoon put out 45 Museum special traps along the stream to the SE. This was in a gradually inclined canyon and no longer had running water, only elongated pools with many dry gaps between. It was far



Murray
1948

110

Journal

June 11 La Laguna, 6200 ± ft., Sierra de la Laguna, Baja Calif.
more open and only in spots did the trees
grow over and furnish shaded places

Also set out 6 Schuylers, 3 in a large patch
of prickly pear out in the open in the lagoon,
and 1 each in another large patch and 2 small
ones next to the woods. ~~Left the mouse traps set.~~

In the evening there were more small
bats and fewer large ones, with not many
of either. Shot 1 ♂ Pipistrellus hesperus.

Eptesicus did not fly until near dark; then
two were feeding in one spot and I shot 1 ♂.

June 12 Same location

Caught 4 Peromyscus truei (3 ♀, 1 ♂) and the
tail and hindquarters of another. Possibly
a shrew had eaten it. In the Schuylers caught
1 ♂, 2 ♀, 1 discarded, each in a separate clump
of cactus. ^{Neotoma lepida} Left the mouse traps set in place.

Now I have seen two kinds of vireos; as
near as I can tell they are solitary and ^(or 'fello?')
Hutton's, though the latter is indefinite.
Have spent quite a bit of time turning over
rocks on the chance that there might be salamanders.
The Hylas are very numerous under the many
granite rocks along the streams. Found
what must be a grasshopper sparrow
out in the open.

In the afternoon checked my traps and

Murray
1948

111

Journal

June 12 La Laguna, 6200 ft., Sierra de la Laguna, Baja Calif
found they had caught 4 juncos and 1
Gerrochnotus. Released them and left them
for the night.

Watched 3 young juncos, one of which was
originally out in the open ground. Gave
continuous peeping noises and must have
just left the nest, for the parents soon arrived
and one fed a young one.

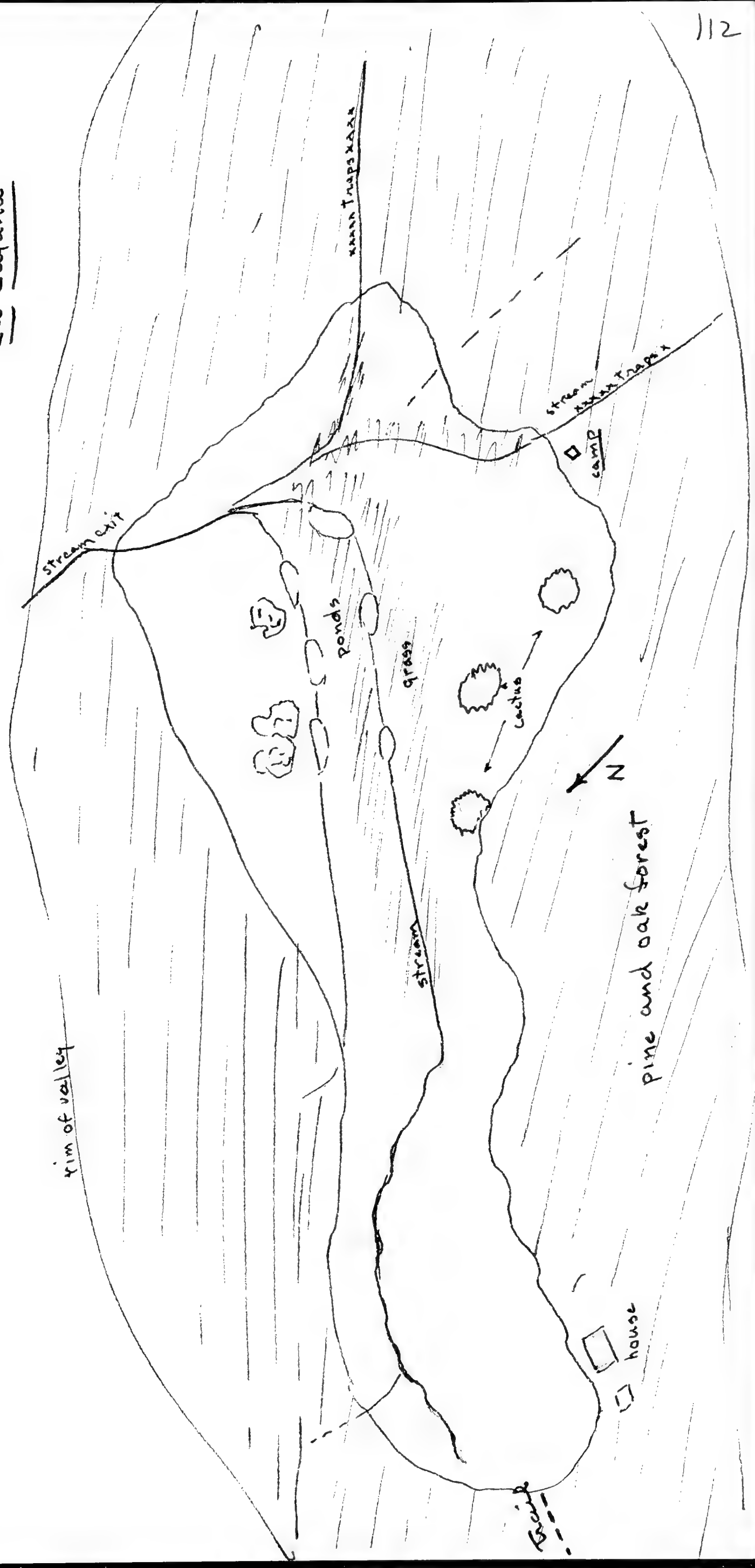
Saw more bats this evening than before. They
seem to feed in greater numbers toward the upper
(West) end of the Laguna. Again Eptesicus
appeared quite late. Could recognize a
number of Tadarida. Shot 1♂ Eptesicus fuscus
and 1♂ Tadarida mexicana.

June 13 Same location

This time traps caught 1♂ 1♀ Peromyscus
truei and 1♂ 1♀ spotted towhees. A lot of birds
fly down to the stream to drink. Whether
they come to the bait or not is questionable.
Saw a flicker drinking.

We have had a graphic display of why
deer are scarce here. The three Mexicans with
us got one deer when we arrived, and
they and some others shot two more
yesterday. Our guide said that each
family in his area shot about two
per month, season or no season. Most

La Laguna



Murray
1949

113

Journal

June 13 La Laguna to Todos Santos
seem to have 22 rifles

The weather up here has been quite dry, a little cloudy in the mornings and clear the rest of the day. Maximum temperatures ranged close to 80° and the minimums just over 50°

At 10:30 we were on our way down again, this time taking a different and very much steeper trail almost straight down one of the ridges. This apparently had been built by the woodcutters, who work part of the time in La Laguna and have a house at the west end of the valley hauling the wood down by burro. It would have been foolhardy to think of taking the animals up this, however.

Part way down we came upon fresh deer cuts and found after that one or some of our Mexican visitors had shot it coming down. Dr. Benson has the skulls of all four deer.

Saw a group of white-throated swifts flying over a deep canyon after we had come some distance. Most of the way down there were some Calif. jays, but saw none at all up on top

Through making better time down and

Murray
1948

114

Journal

June 13 La Laguna to Todos Santos.

Traveling a shorter route, we made it in less than five hours, while going up was over six.

We repacked our load and drove to Todos Santos. Here bathed in an irrigation ditch running through cultivated fields at the edge of town. It was late in the afternoon and bats began to fly in quite large numbers. We shot at them to the great delight of the assembled populace. There were pipistrelles, Tadarida mexicana, and Dasypterus egy at least. Got 2♀ Tadarida, 1♀ Dasypterus.

Camped for the night a short distance out of town.

June 14 Mina Estrella Polar, 600 ft., 3 mi E Pescadero

Today we went to investigate old mines for bats. The first was back down the road past El Pescadero and out a side road into the hills. Here found the mine a series of several stopes, all rather steep. Descended one by rope, about 30 feet deep to a short horizontal shaft. At the end of this was another nearly vertical stope about 4 feet wide and at least 40 feet deep. There were a number of posts as braces. Many Natalus mexicanus

Murray
1948

115

Journal

June 14 Mina Estrella Polar, 600[±] ft., 3 mi E Pescadero
were flying, mostly deep in the shaft but
some at my level. There was also a
large space on one side of me and
a broad crack above on the other side.
By patiently waiting for a chance to
swing, was able to net a few, but they
flew very rapidly and skillfully, weaving
in and out among the posts. There were
frequent loud slapping sounds from
their hitting either the sides or posts.
Several times two bats appeared to
slap wings together. At first they avoided
the light from my flashlight; later seemed
to ignore it and flew in greater numbers
through the beam and all around me.

Netted 4♂, 1♀, all a bright orange color.
I could tell that a large percentage of the
rest were also bright, as they flew by.
They could easily have all been and
only been distinguishable when the light
was right - this in contrast to the great
majority of those at Las Cuevas and
El Chorro on the other side.

June 14 Palmar del Medio, 4 mi ESE Pescadero

Drove to the second mine after some
difficulty in finding the road - again
in the hills. This one was a horizontal

Murray
1948

116

Journal

June 14 Palmar del Medio, 4 mi ESE Pescadero
shaft, fairly long and 6 feet high. It
contained some Macrocheilus californicus
which flew back and forth as we entered.
Working back to the end, found a shaft
going down and a small opening to
the outside above. Most of the bats apparently
went out but some tried to fly back past
us. Netted two easily at that time. Shortly
after went back toward the mouth and
found that many had re-entered at that
end and hung in a group. When disturbed
these began to fly back and forth and some
again attempted to go through me. After
being chased out they came back twice
again. Flew always straight, slowly
and silently. Caught 22 among us, of
which 7♂, 2♀ were released.

After finishing with the cave we
drove back to Todos Santos, and then
at night to a point 15 miles on the
way to La Paz.

June 15 La Paz, Baja Calif.

Drove into La Paz today to have work
done on the trucks and to take care of other
business. At night camped a short distance
out of town.

Journal

Wend
June 16th Plano de Hirey, 50± ft., Baja Calif.

After getting supplies in La Paz, we started our journey back. Had some delay near Punta Conejo where a car was stuck coming down in the heavy sand, but with care were able to get through it ourselves without trouble. Made camp at the western end of the Plano de Hirey. This plain is entirely bare except for a short covering of dried grass and weeds. There are a few scattered low sand dunes, one of which we are camped beside. This has a thin growth of mostly cholla, with cardons, ocotillo and pitahaya. The sand has a wind packed surface soft enough on top to show innumerable mouse and rat tracks. We are at the edge of where the weed covered, silty and much cracked part of the plain ends and a sand blown, still less vegetated band begins and probably extends to the end of the plain to our west.

Set out 50 live traps, placing 20 on the dune beside us and the rest on another similar one not far away. On the sandy flat between them saw many kangaroo rat holes and set 7 rat traps near some of them.

There is a bright half moon shining. At 9: PM looked at the first 20 traps and had nothing.

Murray
1948

118

Journal

June 17 W end Llano de Hurey, 50± ft., Baja Calif.

In the live traps caught 1♂, 1♀ Dipodomys merriami and 1♂, 1♀ young. 2♀ Dipodomys agilis, ~~2♂~~, 1♀ Perognathus baileyi and 3♂, 1♀ baileyi young. Also 1 young Perognathus arenarius. Released all young ones.

The rat traps had 2♂ Perognathus baileyi.

The 20 traps which were empty at 9: PM last night turned up with 4 rats and 1 mouse.

Almost every one of the traps had been visited by mice, rats or both. In most cases the seeds had been eaten out of the front of the trap, others they apparently were afraid to touch. With all the tracks showing so clearly it was possible to get some idea of their nocturnal activity. Under bushes, and especially cholla there were many tracks, often an almost solid mass of them. Out in the open there was less movement, but most of the space had been covered by one or another to some extent.

After finishing up the specimens we went on to Pozo Grande, where we camped beside the pond as before. This time there was not the great crowd of Myotis yumanensis. Rather, only 4 or 5 appeared late and flew rapidly over the surface. A number of Eptesicus fuscus fed nearby.

Journal

June 18 San Jorge, 25° 44' N, 112° 07' W, Baja Calif.

Early in the morning drove to San Jorge, by the seacoast. It amounts to no more than a small fishing shack with a few boats, near the inner end of a long estero. At this point it is about 500 yds across, running southwest to the sea which may be heard roaring in the distance. Farther down there is a great mangrove island, and they also line the shores, apparently more thickly on the other side. The water is quite shallow, being not more than a foot at low tide for some distance.

This morning I went down the shore south. Nearby there is a good sized mangrove swamp, and after that they line the shore, some places growing out into the water, others only at highest tides. For some distance the ground is flat and the water must come well back at times, for there is *salicornia*, *meseembryanthemum*, and other salt marsh plants in a damp surface. Behind this comes the gentle slope of a low hill, bearing ocotillo, *frutia*, *pitahaya agria*, cholla and some others. All the bushes and some *pitahaya* are heavily burdened with *orchilla*. Nearer the water there are a lot of dulce mangroves, quite similar but

Murray
1948

120

Journal

June 18 San Jorge, 25° 44' N, 112° 07' W, Baja Calif.

with smaller leaves. Most of these now bear small, bright red berries.

Some distance down begins a bank of soft sand just behind the mangroves and on it grows dulce mangrove. Here the dry growth in sand comes down to its edge. Much of the surface is a mass of shells and shell fragments.

Saw several Calif. jays (see sp. acct.), and 3 or 4 reddish egrets flying or fishing along the shore. There was also an osprey, whitethroated ibis and semi-palmated plover.

There are several patches of the strange crawling cactus, , and some of it scattered in other parts.

Saw two small rabbits, probably cottontails, in the brush and many tracks. There was also what must have been a coyote - they have well beaten trails running behind the mangroves.

Set 115 traps, 50 of them live traps, in the hope of catching Reithrodontomys. They were set in a variety of places; some by the low, scattered clumps of bushes in sand back of the fishing hut, others along the edges of the mangroves or the salicornia flat behind, the rest among dulce mangroves at the edge

Murray
1948

121

Journal

June 18 San Jorge, 25° 44' N, 112° 07' W, Baja Calif.

of the dry brush or on the banks farther south. Most were in areas washed by the high tides and perpetually muddy.

June 19 Same location

Caught 2♂ Perognathus baileyi, 5♀, 3♂
Perognathus arenarius, 2♂, 4♀ Peromyscus
maniculatus

All Perognathus were taken in dry sand, most by the dulce mangroves just back of the washed flat. The maniculatus were along the edge of mangroves or the salicornia just behind them, in places which had been wet by the tide. Many of the snap traps had been sprung by crabs which usually left claws, and the live traps held about a dozen. Although many traps were soaked and the surface quite muddy, the mice were almost all perfectly dry.

Saw several Caspian terns fishing out over the estero. The reddish egrets are quite common.

This evening set 50 live traps and 50 museum specials. The former were across the hillside back of camp in sand and the aforementioned brush. The others were divided between the edge of the broad mangrove swamp nearby, and

Murray
1949

122

Journal

June 19 San Jorge, $25^{\circ}44'N$, $112^{\circ}07'W$, Baja Calif.

about 20 traps actually in the swamp. These ran through a dense tangled growth about 4 feet high - somewhat shorter than much of the rest, but very difficult to move in.

The surface was soft mud but largely covered with dead leaves and branches. Most of the traps were on this bottom, with 4 resting high on branches, and 2 on a thick mat of mesembryanthemum which grew across the top of some bushes.

In the evening many purple martins fly south over us, passing high and rapidly in scattered groups. There have been no bats. A bright, almost full moon these nights.

The weather here is very reasonable - cloudy in the morning, moderately warm during the day and small temperature range. A wind came up in the afternoon.

June 20 Same location

The live traps had 7♂, 6♀ Perognathus arenarius, 1♂, 1♀ Dipodomys merriami, 1♀ Dipodomys agilis, of which I released all but the agilis. In the snap traps, those set in the swamp caught considerably more; about a 40% catch. Two out of four of those in the trees had mice, and both of the ones on ~~sabicea~~ ^{mesembryanthemum}. The total was

Murray
1948

123

Journal

June 20 San Jorge, $25^{\circ}44'N$, $112^{\circ}07'W$, Baja Calif.

8♂, 7♀ *Peromyscus maniculatus*. Again these were mostly dry, although 3 had been chewed on, probably by crabs.

We have had little time here for anything but putting out traps and putting up specimens.

This time put the live traps along the low salt marsh bushes fringing the high tide mark, and also the small scattered bushes in sand just behind them.

Took the snap traps along the shore side of the mangroves, and found that here they grew much larger, with thick trunks and branches. There were several open spaces where I could walk in among them, and here set several traps, all in trees 3 or 4 feet off the ground or on mesembryanthemum growing matted on the branches. There was soft sticky mud, already about to be washed over by the tide. Some other traps were set in patches of marsh grass which grew out beyond the mangroves and were standing in water much of the time. Placed them on piles of dried stems which had washed up into a higher, firm mass. Took the rest of the traps around to the other side and put them up off the ground on

Journal

June 20 San Jorge, 25° 44' N, 112° 07' W, Baja Calif.

mesembryanthemum which grew over short mangroves at the edge of the thicket. All the traps, then, were set well clear of the ground in tide washed mangroves.

~~June 21~~ I flushed an oyster-catcher out of the grass by the water. Again saw the purple martins, and there were two sandpipers on the shore.

June 21 Same location

In the live traps caught 2♂, 2♀ Perognathus arenarius, these all well up into the bushy terrain. Released them all.

Snap traps held 8♂, 7♀ Peromyscus maniculatus and 1♂ Neotoma lepida. Most of the Peromyscus were taken in the mangroves or on the grass, rather than along the edge. Particularly productive was the mesembryanthemum growing deep in the swamp. The Neotoma, however, was along the edge. I had seen droppings several times on branches well inside, but no sign of nests. Almost every trap was sprung, by either mouse or crab. I have caught several by the tail which seems too tough to break off. Put up 6; kept the rest as skull only.

After lunch left for Comondú, where we stopped for the night at the same house

Murray
1948

125

San Jorge
vicinity

trap lines

mangroves

Ocamp

fishing
shack

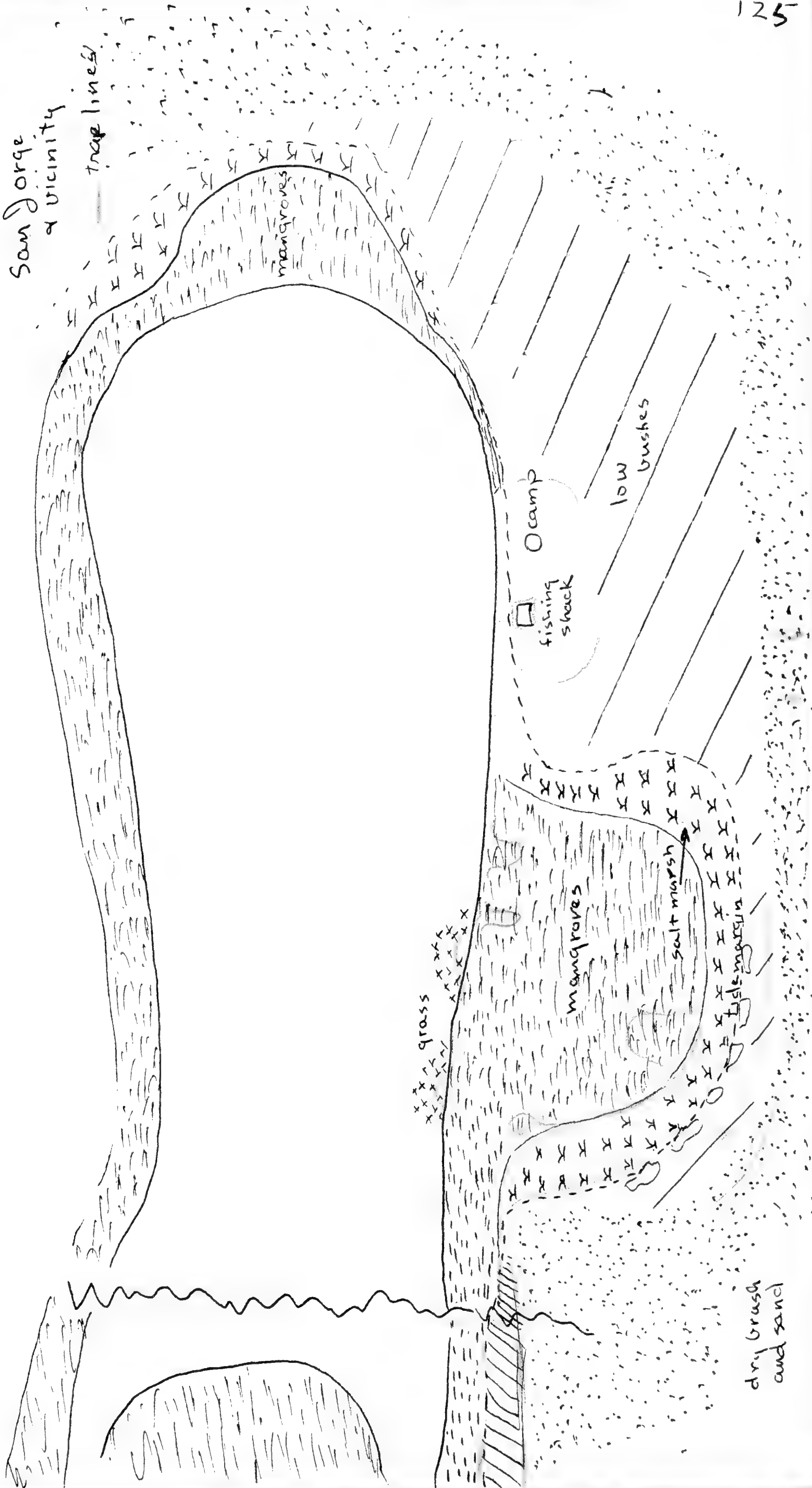
low
bushes

mangroves

salt marsh

fish traps

dry brush
and sand



Murray
1948

126

Journal

June 21 San Jose de Comonda, 700± ft., Baja Calif.

as before. In the evening we found quite a change in the bat supply. Instead of large numbers there were only scattered pipistrelles, a few flying along the road very early. Quite late I saw three larger bats, probably Eptesicus. Boys brought me 2 ♂ Pipistrellus hesperus which they mangled with sticks.

June 22 Same location

At about 5:00 this morning there were quite a few pipistrelles feeding among the trees behind the house - more than we saw last night.

It clouded up and sprinkled last night and remained cloudy most of the morning. Was also a very warm night - minimum 69°

We continued on our way again, looking in several caves. One, about 8 miles north of Camipole, had some Macrotes californicus. It was a short distance up the hillside, shallow, and with a high chimney like ceiling. We kept six for a record

Drove to Rancho Santa Rosalillito and made camp.

June 22 Santa Rosalillito, 25± ft., SE end Bahía Concepción

This a small ranch with a water hole at which we hoped to find bats. Set up

Murray
1948

127

Journal

June 22 Santa Rosalillo, 25± ft., SE end Bahía Concepción
camp under a Palo San Juan

Set out 50 live traps in what might be called a cardon forest, with many of them and no other large growth. There was also pitahaya agria, cholla, ocotillos and some low bushes. The ground was hard packed sand, some gravelly, and the whole area heavily overgrazed.

The bats arrived in rather small numbers. There were Eptesicus and pipistrelles, none flying until rather late. Then most seemed to prefer to feed among the cardons. In one spot, where several grouped together, I was able to net 1♀ Eptesicus fuscus.

The pool was about 8x5 feet and with its surface over 5 feet below the ground. On one side a ramp led down to an edge blocked off for cattle to drink. Few bats came to it at dusk, but around 9:00 we found several there. After that one or two at a time would come every few minutes. Whether they would have drunk or not we did not know. Quast netted 3 Centrozous minor. There was also occasionally a small bat.

Tonight still a bright moon.

Murray
1948

128

Journal

June 23 Santa Rosalillito, 25±H., SE end Bahía Concepción

Caught absolutely nothing in my traps.

We got an early start and drove to Mulegé where we set up camp on the south edge of town, next to a palm grove.

In the evening bats flew in great abundance, and the others shot Eptesicus, Pipistrellus and Dasypterus. I was a little sick and did not shoot.

June 24 Mulegé to Santa Rosalia

In the morning the others went to the large bat cave we had visited previously. Found Macrotus and just ~~one~~ ^{each of} Mormoops and Leptonycteris.

Spent a warm, humid night last night with the minimum 69. There are mosquitos here now, but whether they bore malaria we will learn by the results.

Moved on again, driving to Santa Rosalia. We were delayed, however, by a break in the oil filter line of the Dodge, which still is not repaired. We were also stopped at the edge of town to be examined for diphtheria, for there has been an epidemic in La Paz.

All along Concepción Bay and the Gulf here, there have been numerous brown pelicans, either fishing or in the water.

Murray
1948

129

Journal

June 25 Santa Rosalia, Baja Calif.

After spending the night just out of town we returned to have the oil line fixed and tires repaired. Left after lunch and drove on to San Ignacio.

The flabby, 4-ply tires on the International are proving quite a headache. There have been several flats recently, appearing largely to result from heating. Now one has the carcass ripped, and the only spare remaining a rip in the side wall.

June 25 San Ignacio, Baja Calif.

We stayed here only long enough to eat, then drove onward. Went 23 miles to Rancho Los Martires. The most outstanding characteristic of this place was a stout and chilly wind blowing across the flat plain. There was a windmill which pumped water into a low concrete tank and a long narrow trough, also concrete. These were ideal for bats to come and drink, but we found that only a few were out in such a wind. I saw one blow by rapidly, and Quast shot an Eptesicus and Myotis californicus. Later, when almost dark, an occasional bat flew over the tanks, but almost always when there was a lull in the wind.

Murray
1948

130

Journal

June 21 Calmalli, Baja Calif. (Mina Sol de Mayo), Baja Calif.

This morning there was still wind, along with a high fog - in all very uncomfortable. We drove almost to El Arco before the worst tire blew, then replaced it with the other bad one.

Just before Calmalli we found a mine on the hillside not far from the road. This proved to be huge by local standards - called Sol de Mayo. There was a long horizontal shaft with several branches and tracks with ore cars still remaining. Then a ladder descended steeply for a seemingly unending distance until finally we reached another level probably more than 200 feet from the surface. Here was another horizontal shaft with branches. We had seen a few bats in the entrance of the mine, and down here were 3 or 4. Tevis netted 2 Macrotus californicus which was our total reward for a long climb. There was another shaft with a ladder which went down as far again, judging from a rock thrown down. The walls of this place were a mass of varied minerals, including copper and iron compounds, gold ore, quartz, soapstone and pyrites. We were told later that it was still rich but too expensive to transport ore.

JournalJune 26 Calmalli, Baja Calif.

A short distance beyond there was another horizontal shaft at the base of the hill. In it were a few Choeronycteris mexicana of which we were able to net 3. This mine was quite simple in form, with a shaft about 5 feet high most of the way.

We continued on past Calmalli to the Arroyo San Luis.

June 26 Arroyo San Luis, 800± ft., 9 mi W Calmalli.

Turning into the Arroyo we could see a mine on the hillside across it. This proved to be a long shaft, branched at the end and with several small "nooks" cut at intervals. Most of the way in there was a large break in the roof with a blocked up wooden slide. There were a number of bats active in the mine, Choeronycteris mexicana of which we took several. Also Quast found a Corynorhinus rafinesquii hung on the roof near the rear, and as we started back Dr. Benson found another in the same fashion; torpid, curled in a little ball, with ears folded back like a ram. Out near the entrance another was flying which I netted. The first two remained hanging even though we walked under them and caused considerable disturbance. Up the hill a little way was a large

Journal

June 26 Arroyo San Luis, 300 ± ft., 9 mi W Calmalli, Baja Calif
hole, supported by beams, which probably connected with the shaft below. Dr. Benson went part way down into this and scared up 1 Myotis californicus and a barn owl.

Waited at dusk in the wash for bats but saw none. There were night hawks and I heard a poorwill. We spent the night where we were, next to the wash.

June 27 10 mi SE Mesquital, 400 ± ft., Baja Calif.

We drove onward again today, but not very far, for our luck ran out and a wheel came off of the Dodge. This calls for a new wheel, so Dr. Benson and Quast set out for Santa Rosalia to have one flown down, while Tevis and I prepared for a long session in the middle of nowhere. We rebuilt the road around the truck, and made camp on the other side. Since we are going to be here several days, we will try to get as complete a picture as possible of the life on the Vizcaino Desert. This seems to be as typical a part as any.

The soil here is hard packed and sandy, with the surface more of a gravel. Color is light with a yellowish-tan cast. It is uneroded except for full sized washes, and very flat.

Murray
1948

133

Journal

June 27 10 mi SE Mesquital, 4000± ft., Baja Calif.

The plants are dominantly yucca, ocotillo and pitahaya agria, with a great many of several kinds of low bushes a foot or two high. There is also lumbei, creosote, frutia, cholla, candelilla. In all the vegetation is low but dense. This part happens to be free from cardons, but there are many nearby.

Set out 50 live traps near camp, spaced about 40 feet apart. In the process saw a Calif Jay, plumbeous gnatcatcher and heard an ash-throated flycatcher. Birds, however are scarce. Did not see more than one lizard, a Cnemidophorus tesselatus.

A wind has been blowing strongly all afternoon from the NW and continued into late evening. It also became quite chilly and damp. That this is a damp climate is evidenced by the orchilla on all ocotillo and some on other plants.

June 28 Same location

High fog this morning which cleared away by 9:30

In the traps caught 3♂ Dipodomys agilis, 2♂, 1♀ Dipodomys merriami, and 1♂, 1♀ Perognathus baileyi. The baileyi are distinctly brownish, in contrast to any we have taken elsewhere. Most of the catch was bunched

Murray
1948

134

Journal

June 28 10 mi SE Mesquital, 400 ± ft., Baja Calif.

for no apparent reason at one end of the line

There are fairly numerous woodrat houses, almost all built in a pitahaya and loosely constructed of dead stalks and branches. Most have fresh droppings. There are also a few old looking gopher workings. So far have seen no jacksnakes, though their droppings are far commoner than stones here. Tevis shot one last night. Yesterday at about 4:00 I found a Salvadora hexalepis, which remained motionless in the open until I moved for it, then dashed for a bush. Caught it easily by hand. It objected violently, thrashed around and bit me several times.

There is a wash about 300 yards north of here, broad and sandy, with thinner vegetation. Also, on the east is another wash or a continuation of the first but running at right angles; i.e., North to south. On the near side is a silty bank about 12 feet high and covered with bushes such as mesquite. Along this is a more deeply cut channel from 10 to 15 feet across with a rutted and irregular bottom. In spots there are some rocks washed to there. The vegetation is considerably different—

Murray
1948

135

Journal

June 28 10 mi SE Mesquital, 400 ± ft., Baja Calif.

green leaved shrubs of which I could identify only the mesquite. Very soft sand here, and there is a strip just beyond of very soft sand blown there like a dune. The rest of the wash is sand with a packed surface, thinner vegetation, but with many cardons.

Set 50 live traps, mostly along the sides of the deeper wash at the edge. Saw a pair of purple martins among the cardons and heard a cactus wren.

Up on the flat near camp, put out 50 snap traps

The same wind again started in the middle of the afternoon, and it became cold in the evening.

A poorwill calls in the evening

June 29 Same location

The snap traps caught 1 ♂ Perognathus baileyi, 1 ♂, 1 ♀ Dipodomys agilis, and 3 ♂, 1 disc. Dipodomys merriami. Those in the wash had 3 ♂, 2 ♀ Perognathus arenarius, 1 ♀ Dipodomys merriami, and 4 ♀, 1 ♂ Dipodomys agilis. The latter were released. Also last night set 9 Schuylers, and these held 1 ♂, 1 ♀ Neotoma lepida. Each trap was set next to a rat house with fresh droppings.

While getting traps in the wash saw

Murray
1948

136

Journal

June 29 10 mi SE Mesquital, 400 ± ft., Baja Calif.

Three brush rabbits close together and a pair of Calif Quail. Every day several American ravens fly croaking overhead. Today several turkey vultures and a caracara appeared to feast on some rat bodies. Costa hummingbirds sometimes come around camp.

Reptiles are scarce. I have seen 1 Callisaurus, 1 Cnemidophorus tessellatus, and 1 Urosaurus microscutatus, although there would be more in the washes.

Set out 100 live traps, all on similar ground not far from camp. Aside from the washes, the only variation in terrain is two sections devoted almost entirely to a small rounded bush about a foot high and growing from one to three feet apart. Water apparently would stand in these during heavy rains, judging from a bit of a crust on the surface which is otherwise the same. Several traps ran through the edge of such ground.

Saw three verdins together late in the afternoon.

June 30 Same location

In 100 traps caught 3 ♂, 2 ♀ Perognathus baileyi, 2 ♂ Dipodomys merriami, and 4 Dipodomys agilis which were released (see sp. acct.)

Dug around in several old looking gopher

Murray
1948

137

Journal

June 30 10 mi SE Mesquital, 400 ± ft., Baja Calif.

mounds but found it very difficult to find the holes as they were plugged up for quite a distance. Set 1 trap.

We are finding it necessary to conserve water stringently, since we are far from any source. Dr. Benson sent word that they might be back by July 4, and we can't last much longer without doing something.

Shot 1 ~~#~~ jackrabbit in the afternoon. I have now seen several and also several brush rabbits. The latter seem to prefer the wash, and the jacks the flat ground.

Set 50 live traps, 25 on the flat and 25 in the wash on the very soft sand just beyond the first gully. We have been interested in finding any differences in habitat preference between merriami and agilis. So far nothing points to any. Put out 6 Schuylers, 3 of them in front of nests which are just holes in the bank along this side of the wash. There are a number of them there, some with stick pile additions on the outside. The other three traps are in front of houses in pitahayas.

Slightly warmer today and with less wind.

Journal

July 1 10 mi SE Mesquital, 400± ft., Baja Calif.

Traps in the wash caught 2♂, 1♀ Perognathus arenarius, 1♂ Dipodomys merriami, 1♀ Dipodomys agilis and 1♂ released. The other traps had 1♂ Dipodomys merriami, 1♂, 1♀ Perognathus arenarius, 1♂ Dipodomys agilis and 2 released (1♀). One of the arenarius not in the wash was near it, the other was several hundred feet away. A Schuyler set on the bank caught 1♂ Neotoma lepidus, discarded.

Today the fog lifted early and left a boiling hot day. There was a thunderstorm over some hills to the north where a big cumulus cloud forms daily, and we heard it rained a little in San Ignacio.

Set 100 live traps, 50 on the usual yucca-acotillo ground and the others mostly well into one of the areas of small shrubs mentioned previously. About 20 traps from this line extended down a shallow slope which graded into the wash SE of where the bank ran out. The sand here is fairly soft with a slight gravelly crust, and the vegetation still the same as that above. In this vicinity the rabbits abound. Brush rabbies tend to be in the wash, while jackrabbits are almost all up on the flat and grouped within a relatively small area. They are

Murray
1948

139

Journal

July 1 10 mi SE Mesquital, 4000± ft., Baja Calif.

exceedingly tame (jacks), and would sit and watch me at close range as long as I was willing to watch them. When chased they run a minimum distance before hiding behind a bush or even remaining in the open. Shot 1♀ Sylvilagus bachmani and 1♀ Lepus californicus. Found a group of 5 or 6 Calif. Quail, probably a family. Left 5 Schuylers out, moved 2 of them.

In the evening after dark a poorwill came and alighted momentarily on the ground in camp.

July 2 Same location

100 Traps caught 2♂, 4♀ Perognathus arenarius, 1♂ Perognathus bairdi and 1 other which I lost in camp and set traps for; 1♀ Dipodomys merriami and 1♂, 2♀ released; 3♂, 2♀

Dipodomys agilis, all released (see sp. acct.)

5 Schuylers had 1♂, 1♀ Neotoma lepida.

My gopher trap, still in the same hole, finally caught 1♀ Thomomys bottae.

Of the above arenarius, only 3 were in very sandy ground, the others on the little plain with low bushes a substantial distance from the wash. This place was a little more productive than the rest of the terrain around it has been, though exceeded by the wash.

Murray
1948

140

Journal

July 2 10 mi SE Mesquite, 400 ± ft., Baja Calif.

Set 50 live traps not far from camp, still trying to get baileyi which is not too common. Distance between traps has been consistently 35-40 feet. Left out 3 Schuylers, 2 in new locations, and 2 now set on the bank in front of holes.

July 3 Same location

50 traps caught 3 ♂, 1 ♀ Perognathus arenarius, 2 ♂, 1 ♀ Perognathus baileyi (1 was caught in an extra trap by camp, probably the one lost yesterday), 1 ♂ Dipodomys agilis, 2 ♂, 2 ♀ Dipodomys merriami. These arenarius show that they definitely, though infrequently, do live on the hard & gravelly ground far from the washes.

This evening did not put out mouse traps, but set 7 Schuylers, 1 on the bank and the rest beside stick houses.

Saw a Browntowhee beside the wash in the evening. Shot 1 ♂ Lepus californicus, again very tame, and in the same place I have found most of the others.

The weather is back to normal and following the old pattern of high morning fog lifting by 9 or 10, wind from the northwest in the afternoon, and a cold damp night.

Murray
1948

141

Journal

July 4 10 mi SE Mesquital, 400± ft., Baja Calif.

In 7 Schuylers, caught 2♂, 2♀ Neotoma lepida, and 1♀ discarded. These traps were rather widely separated which may explain the improved catch. There has been some indication that rats control several houses, for I can't remember catching 2 close together when traps were by adjoining houses.

Set 4 gopher traps in one area of somewhat softer gravel where there were many fairly fresh mounds. One of the traps was on the bank by the wash. Again found it exceedingly hard to find holes because they were often plugged the whole distance between mounds, sometimes a matter of several feet.

Finally saw one very wary Citellus leucurus ^{on the bank by wash}. There are a few young and tiny Urosaurus microscutatus, apparently not long hatched.

Today we ordered some supplies from El Arco as we are running low. Waited 3 days for a car going south so we could do so. The traffic is quite irregular; some days there are three or four cars and trucks, others none.

Put out 50 live traps, 30 of them on the

Journal

July 4 10 mi SE Mesquite, 400 ± ft., Baja Calif.

Bank at this edge of the wash, mostly a hard gravel deposit. The rest were strung along the usual flat.

July 5 Same location

Caught 3 ♂, 1 ♀ Perognathus arenarius, 1 ♂ Perognathus baileyi, 3 ♂, 2 ♀ Dipodomys agilis, 1 ♀ Perognathus spinatus. The latter was on the bank as was one other which immediately leaped from the trap and escaped.

While picking up traps came within 10 feet of a brush rabbit which watched me almost unconcernedly.

This morning I saw a sparrow hawk harassing a caracara perched on a cordon. It dove repeatedly on it, keeping up a constant clamor of shrill cries and quickly picking up altitude for another dive. The caracara did nothing more than lift its wings and duck at the bottom of the dive which seemed to come within two feet of it. Several times it also gave a low croak at that time. The hawk finally gave up and flew off, leaving the caracara still holding its position.

Took 50 live traps several hundred yards north up the wash to a section of much varied terrain. Here it broadly joins the other wash at right angles and irregularly,

Murray
1948

143

Journal

July 5 10 mi SE Mesquite, 400± ft., Baja Calif.

Leaving silt flats, gullies, and unwashed strips. Put 20 traps in rather soft silt with sand bars and occasional rocky sections, and bearing mostly a dense growth of mesquite, fruitia and other green leaved bushes, with cholla and pitahuya. With 1 trap worked up over an "island" of hard gravel and rock, yucca, cactuses and a few low bushes.

On the east side of the wash is a cliff about 25 feet high and above it a barren and forbidding slope of dense small rock with just a little yucca, ocotillo and low shrubs. Ran the rest of the traps along the top; and then the face of the cliff, which was a conglomerate of medium sized rock in a sandy, almost concrete-like base. In this saw several woodrat holes.

There are linnets in the wash.

Today there was a broad blanket of clouds in the morning which remained to a large extent all day.

In the evening went out looking for snakes or possibly Coleonyx, but found nothing.

Murray
1948

144

Journal

July 6 10 mi SE Mesquite, 400± ft, Baja Calif.

Trapping in the new ground was unsatisfactory. Caught 1♂, 2♀ Perognathus arenarius, and 1♂, 1♀ discarded. All of these were in silt but one, and this very close to sand on the bottom of the cliff. Also took 1♀ Perognathus spinatus among the rocks on the cliff.

Found I had caught 1 Thomomys bottae but it was ruined - kept skull only.

Yesterday afternoon scared up a great horned owl from the cliff-side

At about 10:30 AM went on an extended search for Citellus leucurus. Started off to the north, going past the wash and into mostly rolling ridges with washed gullies between. These slopes were almost all rocky and there were many stream cut banks, all appearing favorable for the squirrels but bearing none that I could see. Finally circled around and came back along the wash from the northwest, still following rocky banks. Along one saw three squirrels, two of them together. These were exceedingly timid and rushed away while I was still quite far away. One took off down the wash and ran fully 50 yards - and may still be going

Murray
1948

145

Journal

July 6 10 mi SE Mesquital, 4000± ft., Baja Calif.

I also had seen one other on a bank shortly after I started out - a total of four for 2 or 2½ hours search.

Lizards were also very scarce and both may have been considerably influenced by the mid day heat. Saw 2 or 3 Callisaurus, about the same of Cnemidophorus tesselatus, and one Sceloporus magister, all at easily the greatest height of timidity I have encountered on this trip for any species. One notable exception was yesterday afternoon late when a Callisaurus all but let me step on it before rushing off.

Saw a violet-green swallow enter a hole near the top of a tall cardon in the wash.

In the late afternoon after it had become cooler again I went back hunting squirrels. Looked in the places where they were before, but found none there or anywhere else.

One woodrat ambled across a 20 foot open stretch from a nest to a fallen cardon. Saw a hummingbird chasing an insect, probably a wasp, over a tortuous route, with many arcs and dives, staying two or three inches behind it for quite some time.

Murray
1948

146

Journal

July 6 10 mi SE Mesquital, 4000 ± Ft., Baja Calif.

Saw three black-throated gray warblers, and finally identified another woodpecker as the ladder-backed woodpecker. This is fairly common among the yucca which it seems to prefer to work on, while the gila woodpecker is almost always in the wash with cardons. Saw another Sceloporus magister which promptly rushed into a woodrat nest. Quite late in the wash there were two nighthawks.

Set 50 live traps, part along the road and part down the center of one of the open places with only small shrubs.

In the evening well after dark, a Phyllorhynchus decurtatus leisurely crawled up to within a foot of the camp fire and not far from where I was sitting. Took its capture rather calmly.

July 7 Same location

Traps caught 1 ♂ Perognathus baileyi; 1 ♀, and 3 ♀ released, Dipodomys merriami; 2 ♀, and 2 ♂, 2 ♀ released Dipodomys agilis, 1 ♂, 1 other Perognathus arenarius, both released. (See sp. accts.) The open ground had a little better percentage of catch, and had the arenarius. The baileyi was in the brush.

Murray
1948

147

Journal

July 7 10 mi SE Mesquital, 400 ± ft., Baja Calif.

Took up my three futile gopher traps and reset them in new holes. These looked pretty fresh and were each in a group of several mounds located past the bank, where the high ground intergrades in a gentle slope with the wash, and the ground is soft gravel.

The weather turned hotter today, lacked fog.

July 8 Same location

Caught 2 ♂ Thomomys bottae out of 3 traps

Went out this morning to look for squirrels, largely in the same area north as before. Found none along any of the rocky banks, but one small area of packed sand in the wash produced several, mostly young, which I found too wary to shoot.

There is one strip of very soft sand in the wash in which I regularly see a number of quail. Today there was one pair, another pair with 3 small young, and still another with 2 small young. These were fairly bold.

Today turned out to be blazing hot with very little breeze

I have seen several thrashers in the

Murray
1948

148

Journal

July 8 10 mi SE Mesquital, 4000± ft., Baja Calif.

wash, which by elimination must be San Lucas thrashers. Some of these have landed on vertical trunks of cardons and worked their way up for short distances with fair agility. One hung from the tips of yucca spikes and had its tail bent up beneath in an acrobatic fashion.

The Costa hummingbirds spend much of their time with one chasing another.

They often come into camp, sometimes to inspect our red pepper and cinnamon cans. Seem to feed exclusively on the many ocotillo flowers.

Today a Kangaroo rat rushed up to the mouth of the tent and then took refuge inside between some boxes - this occurring in the middle of the day. None had been recently released to afford a reason.

We are running low on food again, though keeping up the water supply from passing trucks. The others still await the parts from the North, in Santa Rosalía.

Tonight there is almost continuous lightning from the SE.

Murray
1948

149

Journal

July 9 10 mi SE Mesquital, 4000 ± ft., Baja Calif.

My one remaining gopher trap was empty. Indications are that these gophers each have a great range with a widespread group of mounds, for no two traps placed within 50 feet, or perhaps more, of each other have both caught animals. One trap was twice visited and had dirt pushed up against it, but after a gopher had been caught fully 70 feet away there was no more activity.

Today saw a verdin feeding a young bird able to fly. The parent searched energetically among scotillo flowers for insects, while the youngster maintained a constant clamor of peeping.

Every day a sparrow hawk begins its abuse of something in about the same area to the east, diving on it repeatedly and giving shrill cries.

Probably each time is a caracara as the first instance. It appears that the hawk has a nest nearby, perhaps in a lone cordon on which it frequently perches.

Very hot again but a cooler evening with a breeze promises a break.

Murray
1948

150

Journal

July 10 10 mi SE Mesquital, 400 ± ft., Baja Calif.

Last night at dusk I went over to the wash and hoped for bats, but to no avail.

This morning went out once again to look for Citellus leucurus. This time I confined my efforts to the flat sandy ground in the wash to the north — a section running along the road which is halfway between the soft sand and packed silt, and in which we have found the squirrels to be most abundant.

As usual they were exceedingly wary, spotting me often a hundred feet away. At such distances they were inclined to run behind a bush and if I came closer, they down a hole. A few I would come upon somewhat closer, and if not frightened much they sometimes stopped to watch while still in sight. Only in these cases could I get a shot. Chasing a squirrel, even creeping a few feet, was futile.

One scrambled up a yucca tree trunk to a height of seven feet to watch me. Another ran to a hole near the base of a yucca clump, and then a few moments later appeared from a hole about 8 feet high

Murray
1948

151

Journal

July 10 10 mi SE Mesquital, 4000± ft., Baja Calif.

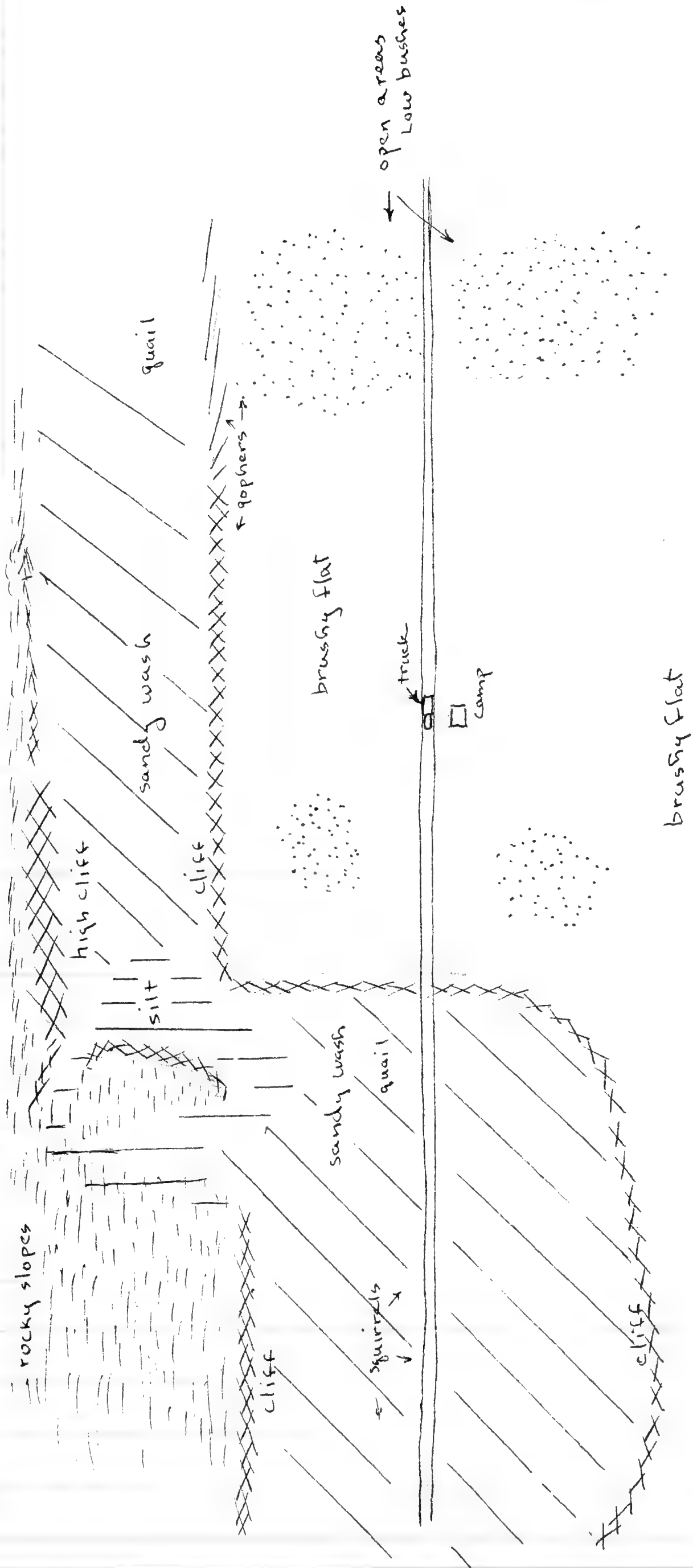
in a dead trunk. After being frightened back into it, the creature later popped out of still a different hole in the ground a few feet away. Both times it practically had its hind legs hanging down the holes. The trunk to be sure was hollow and undoubtedly entered from underground. Another squirrel, watched from a distance, entered its hole and soon came back out; stood high on its hind legs rather than just sitting up to watch me. Scared it back to a position half protruding from the hole, where it was soon joined by another from a hole a few inches away. These eventually both came out and disappeared behind bushes. Both were adults. A large proportion of the squirrels are young, however. Altogether shot 2 ♀ adults, both lactating.

Three different times a night hawk flew by; the last must have been at least 9:30 and pretty bright and hot. Saw a pair of purple martins chasing each other. One new bird for today was a Bewick wren.

Many times in the past few days a lizard has rushed down the trunk

Murray
1948

152



Camp Area
10 mi SE Mesquite



Murray
1948

153

Journal

July 10 10 mi SE Mesquite, 400 ± ft., Baja Calif.

Mammals found here were:

Perognathus arenarius — Abundant in the wash with a very few on the hard ground of the flat.

Perognathus baileyi — Uncommon, found on the brushy flat only. Averaged not much more than 1 per 50 traps.

Perognathus spinatus — Caught 3 on gravelly or rocky banks.

Levis also caught just a few Peromyscus maniculatus and eremicus.

Dipodomys agilis — Abundant in all parts. May have been more so but the live traps are a little small for them.

Dipodomys merriami — About as common as agilis, possibly more frequently taken on the brushy ground.

Neotoma lepida — Numerous houses in the brush, and also holes in banks.

Thomomys bottae — Not too numerous, though well concentrated in one place.

One gopher seems to range widely.

Lepus californicus — A great many here, apparently grouped in certain parts.

Sylvilagus bachmani — Very numerous in the wash.

Citellus leucurus — Scarce and very

Murray
1948

Journal

154

July 10 to 10 mi SE Mesquital, 4000± ft., Baja Calif.

vary. Some on the rocky banks, with most grouped into one section of the wash.

Canis latrans - Occasionally heard or tracks seen. Tevis trapped 2 adults, 2 pups.

Synx rufus - Tevis trapped one. Saw no tracks.

There has been no evidence of foxes, doubtful signs of badgers, and I have seen only one likely set of skunk tracks. Only one bat seen.

Reptiles seen were:

Callisaurus draconoides - Occasional in the wash.

Cnemidophorus tessellatus - All parts but not common.

Cnemidophorus hyperythrus - Occasional in all parts.

Sceloporus magister - Moderately common, usually on yuccas or near woodrat houses, and mostly in the wash.

Lepidosaaurus dorsalis - Saw one on the sand.

Urosaurus microscutatus - Scarce but in all areas. There are a few small ones.

Phyllorhynchus decurtatus - Caught one at night.

Salvadora hexalepis - Caught 1 in afternoon. Tevis also found one probably Coluber flagellum.

Murray
1948

155

Journal

July 10 10 mi SE Mesquite, 4000 ± ft., Baja Calif.

Birds seen here were:

Cactus wren - common in wash

Costa hummingbird - very abundant, feeding on ocotillo.

Turkey vulture - Several appeared only after we put out animal bodies.

Caracara - The same

American raven - Several or the same one flew over every day. Sometimes in pairs.

Brown towhee - saw several times, usually pairs.

Plumbeous quail - Often seen

California quail - Several pair in two sandy wash localities. Most had 2 or 3 small chicks.

Ash throated flycatcher - common

Sparrowhawk - One became excited daily near camp.

Verdin - numerous

Violet-green swallow - several flying daily.

Nighthawk - One at dusk, another in morning

Purple martin - seen several times in pairs.

Calif. jay - saw two or three

Black throated gray warbler - saw a few

Desert sparrow - saw one group of several

Gila woodpeckers were mostly in the wash,

ladderbacks in yuccas, also saw San Lucas Thrasher.

Journal

July 10 10 mi SE Mesquital, 4000± ft., Baja Calif.

of a yucca tree and disappeared. Only today was I able to identify them as Sceloporus magister (though suspected). Shot 1 and clearly saw another.

This afternoon the others finally arrived with new parts, and by evening had them installed ready to go.

July 11 24 mi NW Punta Prieta, 2000± ft., Baja Calif

Broke camp in the morning, and after thirteen days here were on our way. Didn't go much past Mesquital, however, before a tire blew on the International. They had bought a new one but we are now left with no spare and a cut in one tire.

Drove to a point 24 miles beyond Mesquital where there was an old shanty and corral. This was beside a steep hill on the south, and surrounded by fairly soft sand in a canyon, dominantly covered with agaves. There were also various kinds of brush and pitahaya and cholla, with cirios the only tall growth.

Set 50 live traps on the hill slope. This was of medium and small well weathered lava rock, with hard earthy ground. There were scattered copals and cirios, many

Murray
1948

157

Journal

July 11 24 mi NW Punta Prieta, 2000 \pm ft., Baja Calif.

agaves, and small shrubs

A few bats flew in the evening, of which Eptesicus seemed to predominate. Shot

1 ♂ Eptesicus fuscus. Quast also got a Tadarida ferox

July 12 Same location

After a cold night with minimum 50°, we awoke to find a heavy wet fog and a nasty chilling wind blowing

We were burning an agave which had been cut off and consisted mostly of dead material, when a Xantusia vigilis emerged

In the traps caught only 1 imm. Peromyscus eremicus, released.

Drove onward to Cataviña, where we established ourselves at Rancho San Luis, at the upper end of the canyon.

July 12 Cataviña, 1850 \pm ft., Baja Calif.

There is water here in several places. One deep cut draw is full of stream bed vegetation and has one pond about 8 x 15 feet. Water from this is run down through a ditch to irrigate. The draw runs into a broad sandy wash in which there is a long, irregular shallow pool. Also up toward the house is a pool around

Murray
1948

158

Journal

July 12 | Cataviña, 1850' ft., Baja Calif.

10 x 15 feet. Several very tall palm trees grow in the canyon.

Pipistrelles arrived in considerable numbers at dusk, feeding all around. There was one Dasypterus which Dr. Benson shot. When almost dark several Eptesicus flew over. Shot 4 ♀ Pipistrellus hesperus, 1 ♀ Eptesicus fuscus. After dark we tried the pools with nets but found few. Two Myotis californicus were caught.

There were quite a few Hylas singing, also some Bufo punctatus. Found one Bufo in the water running out of one pool with a ^{small} punctatus clinging firmly to its back. Would not release its grip even when handled and put in a sack. Kept them both.

July 13 Same location

There are many linnets living mostly in the palm trees.

Moved on again, hoping for the best with the tires. Passed a Callisaurus which was perched on a rock about a foot high and stretched up at full height to watch us. Later in the granite boulder country saw a Sceloporus orcutti on

Murray
1948

159

Journal

July 13

one of them.

One of the tires blew but not the one expected. With a strange burst of good fortune we landed by a rancho which had a pile of tires left by a passing truck which was hauling them south. Two were the right size and we decided to spend the night there, settling the deal in the morning.

A few bats flew in the evening, apparently all pipistrelles. Later we gathered hopefully around a large water tank which was adjoined by a much larger tank with just a little area in the bottom covered with water. A few bats came, but it was too difficult to net them.

July 14 8 mi N Rosario, Baja Calif.

Two tires were secured and we managed to get all the way by Rosario before breaking down again. This time it was a rear spring of the Dodge, broken in two places. Dr. Benson went back to Rosario with fair assurance that a blacksmith there could fix us up.

Our spot here is in a broad canyon, pretty well leveled off at this point. We are at the base of a ~~cliff~~ steep hillside.

Murray
1948

160

Journal

July 14 8 mi N Rosario, Baja Calif.

on the west, with a deep cut wash on the other side and a tall cliff beyond it. The whole countryside is mountainous and rugged.

Set out 100 live traps, 30 up on the nearby hillside, a hard crusty surface of soil with a little sandstone. The vegetation is almost entirely bushes, fairly dense, and a few buckeye trees or bushes. 20 more were on a flat place by camp, featuring only very low scattered bushes. The other 50 went along the far bank of the wash, which was silty and thickly grown with bushes and large agaves. Cactus is greatly lacking throughout the area, with only an occasional cholla or pitahaya.

Found a Crotalus ruber just the other side of a bush from camp, sunning out in the open. Did not move while I went back for a gun, returned, or even when I shot it until a few minutes later.

July 15 Same location

On the hill caught 1♂ Dipodomys
1♂, 1♀ Peromyscus eremicus.

In the wash was 1♂ Perognathus

Murray
1948

161

Journal

July 15 8 mi N Rosario, Baja Calif.

and 1♂ Peromyscus maniculatus.

Thick fog came in last night and it was rather cold.

In the afternoon Dr. Benson returned with an improvised repair job on the spring, which we put in place.

July 16 Ensenada

Getting an early start, we drove to Ensenada and were able to complete our business before nightfall. Then continued almost to Tijuana.

July 17 Tijuana

Scooted through the border with absolutely no trouble from either side. No one made a move to inspect us.

Reached Berkeley on the morning of the 19th.

SPECIES ACCOUNTS

BIRDS

Murray
1948

Calif. Jay

June 18 San Jorge, 25° 44' N, 112° 07' W, Baja Calif.

Walking south near the shore of the estero, first saw 3 or 4 on the low hillside of ocotillo, fruitia, pitahaya and cholla. These were fairly close together, squawked a few times. Soon after, two together flew from the dry growth out into the mangroves which lined the shore.

In another spot one jay flew from an ocotillo to the mangroves, bounced from branch to branch with lots of spring and wound up low in the bushes. It remained mostly hidden and quite inactive for a while, then moved deeper in the thicket. Gave frequent series of squawks, 5 at a time or less, which seemed a little thinner and weaker than the harsh cries farther north. Saw another one in mangroves pecking at the branches he perched on and eating something. I could find nothing on any branches & looked at.

One flew to a dulce mangrove beside me while I was motionless and exhibited great curiosity. Changed branches several times, always peering up at me. Then flew to the edge of the bank on which I stood, and again to within 2 feet of my foot. Disappeared into the bushes but returned to squeaking and repeated most of his antics. Did not become at all excited however.

Murray
1948

Canyon Wren

Apr 20 Alaska, 4400 ft., Baja California (Sierra Juarez)

Found the bird in an upper Sonoran growth here at the top of the mountain. There were piñon pines, ceanothus, much scrub oak and Adenostoma, among large granite boulders and outcroppings. The wren was on top of a boulder, singing rather steadily. When disturbed it flew in beneath some rocks for a few moments, then out to another where it sang, stretching upward and holding the head up high each time.

Murray 1948

English Sparrow

Apr 6 Calexico, Imperial Co., Calif.

Mating procedure was taking place. A female was located on a small, low post in the center of a bare lot. A male repeatedly flew up on top of her momentarily, then away to the ground or a nearby platform. Twice another male approached and he chased it away. His actions were repeated for several minutes and then he left. The female remained quiet at all times and did not leave until several minutes later. Yesterday a female was seen aggressively chasing ^{a ♂} over the ground in a park, once gripping it by the head feathers.

Murray
1948

Junco

June 11 La Laguna, 6200± ft., Sierra de la Laguna, Baja Calif.

Found them quite common here in the course of two hours' observation. The area covered was the southwestern side and corner of the valley, at a point where it broadens and starts to bend. Went up a small stream in dense woods, where there were many oaks and pinon pines, madrones, a few large willows, and some other green trees and shrubs. Then crossed over to the SE and up another stream bed where only some pools of water remained.

I never could be sure of the sex distinction, but found the birds often in pairs. Yet there were just as often 3 or 4 birds loosely grouped together. Saw several young birds flying with the others, having stripes of brownish color on their breasts.

I watched one first among the dense dry leaves under oaks, then fly six feet up on the trunk of a large oak, covered with lichens. It moved up the trunk by a series of short fluttering jumps, sometimes clinging sideways. Looked a little awkward and unbalanced. In another place one of a pair behaved similarly and I saw several briefly do the same. They all looked intent on feeding.

Saw one chase another from branch to

Murray
1948

Junco

June 11 La Laguna, 6200 ft., Sierra de la Laguna, Baja Calif.

branch of a pine tree

Several times while I was motionless under the trees, from one to four birds would come near and scold excitedly and insistently. Twice by means of squeaks I drew five birds from all sides, very excited and very noisy. These and all the others were quite fearless and would approach as near as 3 feet with impunity.

June 12 same location

In the late afternoon saw a young junco on the ground out in the open which flew up into a large oak with 2 others. All gave continuous peeping sounds, and looked at me without any apparent fear. Soon a pair of parent birds arrived and one fed one of the young.

MAMMALS

Murray
1948

Sorex ornatus lagunae

June 11 La Laguna, 6,200± ft., Sierra de la Laguna, Baja Calif.

Had set out 42 Museum Special mouse traps, baited with walnut along the stream by our camp on the southwest side of the valley. My traps were along one side and Dr. Benson's on the other, all set to catch a shrew if possible, and at the edge of the water. There were a number of oaks and other trees along the banks offering considerable shade. Several kinds of bushes, particularly a sort of currant, were close to the water's edge, and there were many granite rocks in and along the water.

~~The~~ Caught 1♂ in a part which was very densely wooded and had many leaves on the ground. The trap was under a small ledge next to water where it had washed out a little space. The trap and most of the shrew were wet when I found it. All were set very close together, often no more than a foot or two apart.

Murray
1948

Balantiopteryx plicata

June 2 Cerro Cirildo, 600 \pm ft., 4 mi N San José del Cabo, Baja Calif.

Dr. Benson and Tevis went to a cave at this location from our camp 6 mi N San José del Cabo. There they found many of these bats, the first we have found. Caught about 70 of which I put up 10. (See their notes)

June 5 9 mi SW San José del Cabo, Baja Calif. 300 \pm ft.

From a wandering Mexican we learned about a cave, which turned out to be far up on the hillside, though in view of the sea. It was washed out of the granite outcropping, 15 feet deep and 12 ft. high. A pothole in the ceiling at the rear contained about 15 bats. These were active and flew out readily. We could only net 4. The rest of them flew around outside rapidly, some trying to re-enter. Their flight seems swallow-like and very skillful.

Farther on, past El Tule, Tevis found a cave with more *Balantiopteryx*

June 5 1 mi N Cabo San Lucas

Camped a short distance out of town, shot bats in a field. Shot 1 *Balantiopteryx* and saw many more flying rapidly and irregularly. They seem to be the ^{fastest} ~~smallest~~ flying small bat.

Murray
1948

Mormoops megalophylla

May 4 Mulegé, ($\frac{1}{4}$ mi S), 400 \pm ft., Baja Calif.

Looked into a cave up on the hillside. This had a small mouth but a chamber which broadened out into about 50x30 feet and then narrowed to a very small hole in the rear. There was a deep powdery layer of dust and guano. Dr. Benson went into the rear chamber and chased out a number of bats, of which I caught 2 Mormoops. There were also many Macrotus californicus and a few Leptonycteris.

Murray
1948

Macrotrus californicus

Apr 16 Cerro Prieto, 20 mi SSW Mexicali, Baja Calif.

Dr. Benson found one hung up in a small reed hut, close to an irrigation ditch and surrounded by many mesquites. The area around is farmland, just north of the mountain. The bat flew around a number of times, making no effort to escape though there were a number of gaping holes. Finally was taken in a net.

Apr 29 San Ignacio, 500± ft., Baja California

Searched in two stone walled rooms of the mission at 10 PM. Found two bats in each which had been hung up. A little later two more were taken. These were divided among all of us (see journal)

Apr 30 Same location

Again found several flying around in the rooms which we did not collect. They would hang up frequently for a few moments, each time appearing to swing up into an inverted position without a pause and hooking their feet to any part of the stone ceiling. Then would swing back and forth a few times from the momentum.

May 10 San Jose de Comondru, 700± ft., Baja Calif.

Netted 1♂ in a cave at the base of the high cliff on SW side of town.

Murray
1948

2

Macrotus californicus

(cont.)

May 10 San Jose de Comondin, 7000± Ft., Baja California

It was in one of the two narrow branches of the cave, having a high crack extending still farther back. There was a great deal of guano on the floor. At least one other bat was the same kind, though there were only about 6, and 1 Septonycteris was caught by Tevis. (See journal)

May 20 San Antonio, Baja Calif.

Went into a long horizontal mine shaft in which there were several bats, apparently all Macrotus. We netted 3, then discovered the way blocked and the bats gone beyond.

May 20 1 mi E San Antonio

Found another mine on a steep hillside which contained hundreds of bats, the number we couldn't estimate. We trapped some in two short upper passages, then Dr. Benson went down a long, very steep shaft and drove a lot of them upward into one of the small tunnels. From above we could hear a ~~hoar~~ roar of wing beats which became louder as he drove them up. All were Macrotus except a few Septonycteris. They were very active and some were even flying near the entrance when we arrived.

Murray
1949

3

Macrotus californicus

May 20 1 mi E San Antonio, Baja California (cont.)

A number of the bats flew out of another entrance at road level and into the one where we were.

May 21 Buena Vista, 25 ft, $23^{\circ}38'N$, $109^{\circ}41'W$, Baja Calif.

We caught 3 which flew into one small room of the schoolhouse around 9 PM, each one singly.

May 22 Cerro Agua Amarga, 4 mi SE Buena Vista $23^{\circ}36'N$, $109^{\circ}37'W$

Looked for caves on this hill of sandstone and sedimentary rock. One large cave contained about 300 bats, all Macrotus but 1 Leptonycteris. We kept 18 ♂, 12 ♀ as skulls only. There were several other caves, one of which had a few Macrotus. (See journal)

May 24 Las Cuevas.

Found a few in a large cave washed out of a sandstone cliff. There were thousands of Myotis velifer hanging on the sides and the roof at the back. Just a few Macrotus were there and all hung together, though surrounded by Myotis. Also in the cave was Natalus mexicanus.

Nearby was a still larger cave which had many Macrotus in the rear and apparently nothing else. (See journal)

Murray
1948

4

Macrotes californicus

May 27 El Carrizalito, 1400 ft, 5 mi N Santiago, Baja Calif.

We are staying here in a large brick building originally intended for a tuberculosis sanitarium but incomplete. The walls are plastered and it lacks mainly doors and windows. In one of the small downstairs rooms each night we have found several *Macrotes* hanging but always touchy and ready to fly. This is the only room in which they have hung up, with just a few flying upstairs. The first night Dr. Benson marked about 5. Subsequently 9 have been caught and just 1 was marked. One bore its young during the night while a captive but the baby was dead when we found it. One was caught in the evening over the pool behind the caretakers house. However none were taken in either of two concrete tanks which we hunted over each night.

May 31 Santa Anita, 250± ft., (Cape District) Baja Calif.

Found one hanging in a room of an empty and closed building. Elsewhere there were some *Myotis velifer*.

June 1 6 mi N San Jose del Cabo, 250± ft., Baja Calif.

Looked at a cave in the base of a sandstone hillside. It was about 30 feet deep and very narrow - contained about 30 bats.

Murray
1948

5

Macrotus californicus

June 14 Palmar del Medio, 4 mi ESE Pescadero, Baja Calif.

This was a mine with a moderately long horizontal shaft about 6 feet high. Several bats were flying in the entrance. Working back to the end we found a small opening to the outside, through which most of the bats left, and a vertical shaft going down. Some tried to go back past us, flying straight and slowly. I went back toward the mouth later and found that several had re-entered. Twice more they returned after being chased out. We caught 22 altogether, of which 1♂ and 2♀ were released.

June 22 8.3 mi N by road, Campole, Baja Calif.

Found several in a shallow but high cave up on a lava hillside. Kept six.

Murray
1948

Choeronycteris mexicana

Apr 26 Mina La Fortuna, 2350 ft., 2 mi N Laguna Seca Chapala, Baja Calif.

Last night got 8 in the tunnels of the mine,
2 of them young hanging to the mother and
another young one hung up on the top, at 10 PM

This morning found two more. The mine
has several inclined shafts leading down
to horizontal tunnels on two levels.

Highest temperature recorded was 72° , this
in the lowest tunnel. (See journal)

I had a pregnant ♀, embryo 28 mm.

Murray
1948

Leptonycteris

May 4 $\frac{1}{2}$ mi S Mulegé, 1000± ft., Baja California

Dr. Benson caught about 4 in the inner part of a cave on the hillside. There were two main chambers separated by a narrow opening. A deep layer of guano and dust was on the floor. Also caught were Mormoops megalophylla and Macrotus californicus.

May 20 1 mi E San Antonio, Baja California

Looked into a mine up on the hillside, having an entering passage with two small branches and then a long almost vertical shaft. We trapped some in the side passages and then Dr. Benson descended and drove more up which we also trapped. He found another entrance at road level. There were hundreds of bats in the lower shaft and we could hear a roar of wing beats. Most were Macrotus californicus but we took 20 Leptonycteris divided among us.

May 22 Cerro Agua Amarga, 4 mi SE Buena Vista 23°36'N, 109°37'W

Visited a cave on this rocky hill, washed out of the sandstone and of fair size. There were about 300 Macrotus californicus in it and one lone Leptonycteris. We screened the bats through a net to be sure of their identity. There was a layer of guano on the floor.

Murray
1948

Leptonycteris

June 7 Cerro del Elote, 10 ft., 23°12'N, 110°09'W, Baja Calif.

Looked in a cave washed out of the granite cliffs close to the seashore (see journal for description). There were about 8 or 10 bats, originally in a shallow crevice at the rear. When disturbed became immediately active, part flying out and the rest remaining inside. They circled around and tried to hang safely on the ceiling. Dr. Benson shot 2 there and he and Tervis each netted 1. The several which went out flew over and around the high cliffs which extended above the cave mouth. They would often hang momentarily on a rock and then move on, usually going quite directly from point to point. The flight was graceful and swallow-like and they frequently soared for short distances.

We were shown this cave by Jose Maria Castellano of Rancho Gasparina. He said positively that he had seen these bats eat the fruits of pitahaya and cardon at night, resting on the plant or fruit. Furthermore, he claimed that they ate green leaves.

Murray
1948

Natalus mexicanus

May 24 Las Cerevas, $23^{\circ}34'N$, $109^{\circ}39'W$, Baja Calif.

Found a large cave here, washed out of the high sandstone cliff along the river bed. There were two main chambers, extending back about 120 feet in all. At the rear there was a crevice which broadened out into space for many Natalus hanging close together. We caught a total of 53, probably close to $\frac{2}{3}$ of the number present. Several were a bright orange color. On the wall and ceiling were very many Myotis velifer, and a few Macrotus californicus on the top. Also on the ceiling, grouped together, were several more Natalus. We estimated the total number at very roughly 15,000 of all the species. (See journal)

June 7 La Tenaja, 5 mi SE Punta Gasparina, Baja Calif.

Went up the Arroyo de la Tenaja to this place, a small muddy pool about 2×6 feet and fed by another smaller pool close to it. The Natalus arrived when almost dark - a few times 2 or 3 together, usually just 1 at a time. One would fly around for a few minutes and leave, then soon it or another would return. Almost always they flew very low, within 2 or 3 inches of the ground, and very swiftly and elusively. Often they would in and out of the bushes.

Murray
1948

Natalus mexicanus

(Cont.)
June 7 La Tenaja, 5 mi SE Puerta Gasparina, Capadist Baya City.
Found them very hard to net, and swung at them many times and missed. They had an uncanny habit of varying their course after flying one way a few times. Avoided the direct beam of the flashlight usually, and were inclined to fly up to it and turn back. Was only able to net 1 ♀ after considerable effort.

June 14 Mina Estrella Polar, 600 ft, 3 mi E Pescadero
Found this mine in the hills, consisting of several inclined slopes which led to a horizontal shaft about 30 feet down. At the end of this was an almost vertical one about 4 ft. wide and much cross-braced with timbers. I could see bats flying down below with some coming up to my level. These were very skillful fliers, dodging in and out rapidly among the timbers, and often circling around them sharply. I found them very hard to net, and needed 5 or 10 minutes of concentration plus many swings for each capture. There were frequent loud slapping sounds of the bats hitting posts or walls, and several times I thought they struck wing tips together.

all that I netted (4 ♂, 1 ♀) were bright

Murray
1948

Natalus mexicanus

June 14 Mina Estrella Polar, 600 ft., 3 mi E Pescadero

orange, as were at least a large part of the rest, discernible as they flashed by in the light. All could have easily been that color. The bats at first were afraid of the beam of my light and often turned back from it. Later they began to fly through it and all around me in considerable numbers.

Murray
1948

1

Myotis yumanensis

Apr 29 San Ignacio, 500 ft., Baja California

Two were found in a stone walled room adjoining the mission, at about 10:30 PM, where they had come to hang up.

Apr 30 Same location

Two were brought in by soldiers which they had caught in one of their rooms.

We looked in a high room with stone walls and roof. Several were flying around after being disturbed, and probing in the narrow cracks of the ceiling turned out several more. Some were shot and some netted. The total catch was 15. These were put up by Dr. Benson.

May 2 Mulegé, 25 ft., Baja California

We heard squeaks coming from the roof of a porch behind the government building here. Found numerous bats in a crack between two 2x12 beams side by side supporting the wooden roof. The crack was about $\frac{1}{2}$ in. wide. Took close to 45 with quite a number more getting away.

At dusk went up to the prison on the hill and watched for bats flying out. Here managed to net 2. Of the total catch, only 2 were males.

Murray
1948

2

Myotis yumanensis

May 10 Pozo Grande, 25° 46' N, 112° 02' W, Baja Calif.

We waited here beside the pool at dusk for bats. It was about 80 x 20 yards, had some mesquite and a somewhat rocky ridge along one side. When they appeared they seemed to fly out of the ridge.

I netted 3 by standing on the bank and the others shot several. These tended to fly close to the water and circled around by the banks, sometimes flying into the bushes. (See journal)

Murray
1948

1

Myotis velifer

May 16 Triunfo, 1700 ft., Baja California

Found an old brick compound in town, mostly in ruins but having one second story room intact. It had plaster walls, lacking one, and a wooden ceiling with beams running across. These had spaces between of $\frac{1}{2}$ to $\frac{3}{4}$ inches, filled with bats. Almost all were Tadarida mexicana except 2 Myotis that we saw - caught both.

May 21 Buena Vista, 25 ± ft., 23° 38' N, 109° 41' W, Baja Calif.

Shot one flying down the road when almost dark. Bats were very scarce here tonight.

May 24 Las Cuevas, 23° 34' N, 109° 39' W, Baja Calif.

Near the town was a large cave washed out of a high sandstone cliff. At the rear were velifer packed very tightly together over about 60 square feet of the wall and roof. They were cold and inactive at first, making little noise and very few flying. When caught they crawled on the floor rather than flew. Later they warmed up and made a chorus of chittering. Caught 27. Also present were Natalus mexicanus in a crevice and a few Macrotonus californicus which were among the velifer yet all together. (See journal)

Murray
1948

2

Myotis velifer

May 28 El Carrizalito, 1400±ft., 5 mi N Santiago, Baja Calif.

Caught 1 with a net over a concrete tank full of water. The tank is one of two, 10 feet across and about 1 foot above the ground. The bats come in numbers over it at dusk and for a while after dark. (see journal)

May 31 Santa Anita, 250±ft., (Cape District), Baja Calif.

Found a clump hanging in the corner of an empty room in a closed up building. Apparently they also extended back into a crack there. Did not keep any.

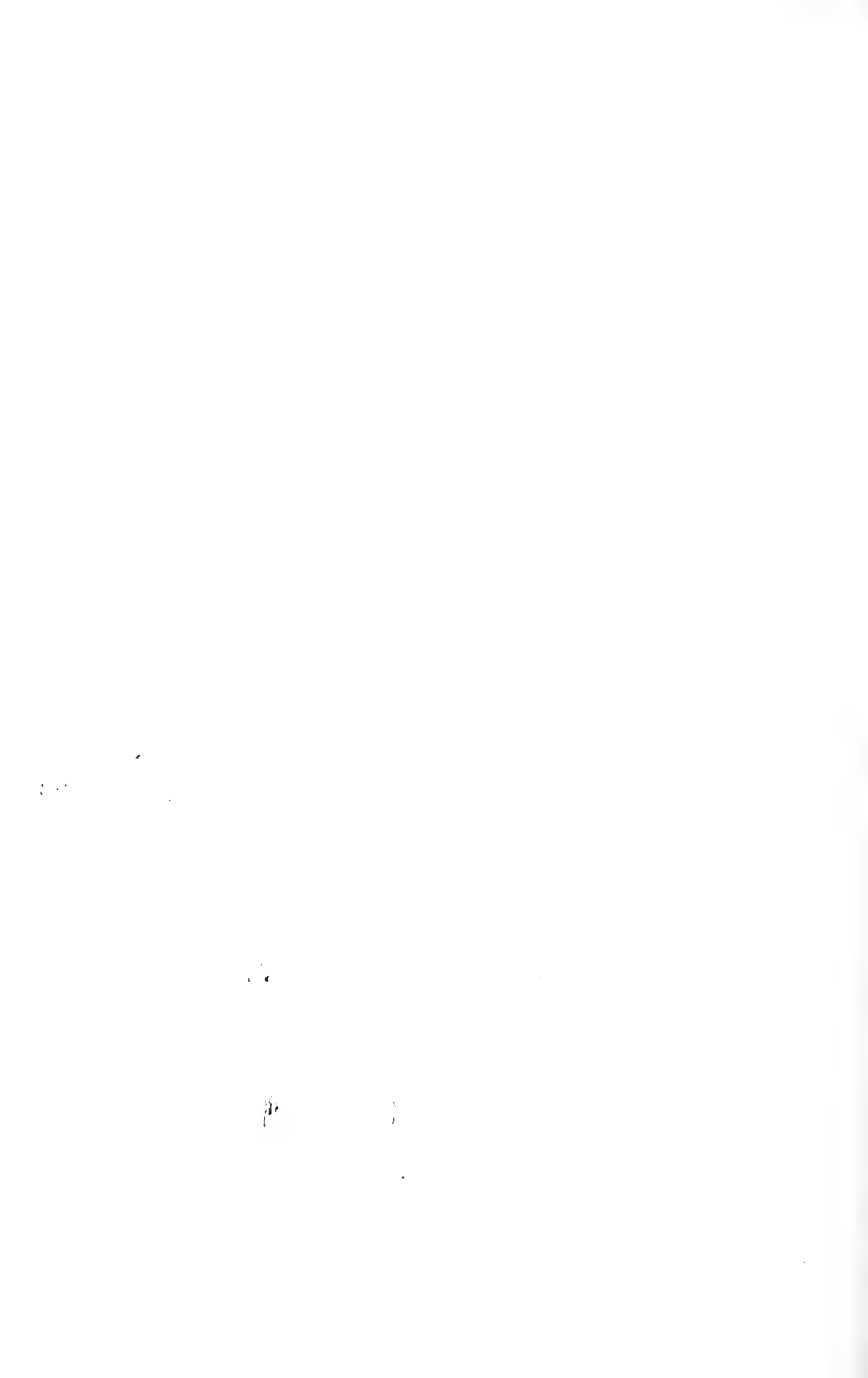
In the evening shot 1 flying by the dense palms and mangos and a ditch with a little water.

June 1 6 mi N San José del Cabo, 250±ft., Baja Calif.

Shot 1 at dusk by camp on a sandy flat. There is a small hill nearby with many large granite outcroppings and a ditch with water.

June 4 Same location

Went up the hillside where Dr. Benson had seen bats enter a crack early this morning. Found a large rounded granite ~~exfoliation~~ outcropping with an exfoliating piece which left a crack of about $\frac{3}{4}$. In it were about 10 bats, several of which we caught and found to be velifer. One was Tadarida femorosacca and 2 others may have been Tadarida mexicana (see journal)



Murray
1948

Myotis volans

May 25 El Carrizalito, 1400± ft., 5 mi N Santiago, Baja Calif.

Caught 1 ♀ with a net over 1 of two small concrete tanks. It measured 10 feet across and was mostly surrounded by large boulders and a brush fence. It was from 1½ feet to almost flush with the ground and the water was less than an inch from the top. Behind was a hillside covered with granite boulders.

Could not tell when it was caught - between 7:00 and 8:00 most likely. Many bats visited the tank, some drinking. Also took Pipistrellus, Eptesicus fuscus, Myotis californicus, Lasiurus borealis

Murray
1948

Myotis californicus

May 12 Santa Ana, Arroyo de los Viejos, 25 ± ft., 24° 33' N, 111° 35' W, Baja Calif

There is a small pool at this rancho, about 8 x 10 feet, at which we waited at dusk for bats to appear. It is bordered by palms and bamboo. Several bats began dipping down over it, of which we netted 6 and shot 1. Continued after dark by flashlight, at which time part of them were caught. None appeared to drink, though we may have frightened them from it. (See journal)

May 25 El Carrizalito, 1400 ± ft., 5 mi N Santiago, Baja Calif

At dusk waited beside a small concrete pool with a net. Found the bats arriving freely, some to drink and others flying back and forth above. Caught 2 ♂ 3 ♀ (See journal)

May 26 Same location

Tonight stayed at another similar pool just above the first. Found the bats began to fly later and were much fewer. Caught 1 ♀.

May 27 Same location

Back to the original tank, Caught 2 ♀. There were a few more bats tonight.

May 28 Same location

This time netted 2.

Murray
1949

Pipistrellus hesperus

Apr 12 San Felipe, 50± ft., Baja California

Each evening at dusk we have seen several flying over our camp or down close to the shore. Several were shot by the others. (See journal)

Apr 14 El Mayor, 30± ft., Rio Hardy, Baja California

Located by the river next to dense mesquite thickets and other vegetation with mountain nearby on the other side. Saw several bats at dusk last night. This morning as we were leaving at about 8:30 or 9:00 a pipistrelle flew down the road in a straight line. Dr. Benson shot it.

May 7 Rancho Cadejé, SE end Bahía Concepción, Baja Calif.

This evening at dusk there were a number flying. Most of them came south up the road, dove at me, circled the barrel of my shotgun and flew on. The action was amazingly consistent, though some of the bats just flew by overhead. All seemed to be pipistrelles - shot one small one.

The locality was a dense strip of dulce mangroves and salicornia between the ^{bay} sea on the east and rocky mountain on the west (see journal)

May 17 Triunfo, 1700 ft., Baja California

Have seen a number flying around here yesterday and today, starting to

Murray
1948

2

Pipistrellus hesperus

May 17 Jimeno, 1700 ft., Baja California

fly early before dusk, and ceasing before dark. Shot 2 (See journal)

May 19 Same location

By now the pipistrelles have disappeared although larger bats seem about as common

May 28 El Carrizalito, 1400± ft., 5 mi N Santiago, Baja Calif.

Have found them quite common here. Each night, stationed at a concrete water tank have netted several. They start flying at about 6:50, high at first and then lower to feed. Many come over the pool but only part to drink. They cease to appear at about 8:00. (See journal May 24-28)

May 29 El Chorro, 800± ft., 2 mi W Agua Caliente (Cape District)

Many flying at dusk here. Shot 1♂ (See journal)

June 7 La Tenaja, 5 mi SE Punta Gasparina (Cape dist.) Baja Calif.

Several flying in the canyon here, mostly over the mesquites and other bushes and not far from a small pool at which we were hunting bats. Shot 2♀.

June 11 La Laguna, 6200± ft., Sierra de la Laguna, Baja Calif.

A little scarce here, as are all bats. They start flying fairly late and feed over the bare laguna. Shot 1♂.

July 12 Cataviña, 1850± ft., Baja Calif.

Many flew at dusk, yet not many came to water. Shot 4♀

Murray
1948

Eptesicus fuscus

May 16 Triunfo, 1700 ft., Baja California

Netted 3 among us in a 2nd story room of an old brick compound, most of which had fallen down. The bats appeared from somewhere below, however, possibly scared out by our Mexican following.

May 17 Same location

Shot 2 flying over camp during heavy dusk. None appeared until it had begun to get dark, and they followed the Pipistrelles by quite a while.

May 19 Same location

Jervis and I returned to the same building of a few days previous. Found much fewer bats in the cracks of the ceiling which before had many Tadarida. This time found 1♂ & Eptesicus mixed in with the others, though both together. Put up both in formalin.

Also shot 2 at dusk flying down the road by camp. When fairly dark two dove and circled around my head which I am sure were Eptesicus.

May 23 Buena Vista, 2500 ft., 23°38'N, 109°41'W, Baja Calif.

Shot 2 flying down the road at dusk. Here the Eptesicus appear when it is nearing darkness, flying low and straight down the road in both directions.

Murray
1948

2

Eptesicus fuscus

May 24 El Carrizalito, 1400± ft., 5 mi N Santiago, Baja Calif.

Found a number of bats at dusk feeding near the caretakers house. Shot 1♂, 1♀. (see journal)

May 25 Same location

Tonight stationed myself with a net beside one of two concrete water tanks 10 feet across to which bats came in numbers.

Caught 1♀ as it was becoming rather dark. Also caught pipistrelles, Myotis californicus, 1 Myotis volans, and 1 Lasiurus borealis.

May 28 Same location

Again caught 1♀ with the net rather late. What I took for several Eptesicus flew across the pool faster than Myotis, often circled and came in at the same point several times in succession. In the two intervening nights caught none at the pools. The total number of bats became much reduced from the first night.

June 11 La Laguna, 6200± ft., Sierra de la Laguna, Baja Calif.

There are not many bats here and Eptesicus is as common as any. They don't appear until nearly dark, then start flying mostly west down the valley. Several were feeding around the center. Shot 1♂.

June 12 Same location

Same story repeated, shot 1♂

Murray
1948

Eptesicus fuscus

June 22 Santa Rosalillo, 25 \pm ft, SE end Bahía Concepción
Only a few bats flew at dusk. With
a net I was able to get 1 ♀ which fed among
the cardons in a more or less constant pattern.

July 11 24 mi NW Punta Prieta, 2000 \pm ft, Baja Calif.
Shot 1 ♀ of a few flying in evening

July 12 Cataviña, 1850 \pm ft, Baja Calif.

Quite a few pipistrellus flew here,
but only late, almost dark, did several
Eptesicus come over, flying straight.
Shot 1 ♀

Murray
1948

Lasiurus borealis

May 25 El Carrizalito, 1400± ft., 5 mi N Santiago, Baja Calif.

Waited beside a small water tank with a net at dusk. The tank was low, about 10 feet across, and mostly surrounded by large granite boulders and a brush fence. Caught 1♀ at 7:45. Also coming to the tank were pipistrelles, Myotis californicus and volans, and Eptesicus fuscus

Murray
1948

1

Dasypterus ega

May 18 Triunfo, 1700 ft., Baja California

Shot 1 ♂ as it flew over a field during early dusk. Located in a canyon just west of town, surrounded by dry rolling hills (see journal)

May 24 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.

Shot 1 ♀ flying near the caretakers house here. There are several small water tanks nearby, and some groups of palm trees on the steep rocky hillside above. (See journal)

May 29 El Chorro, 800+ ft., 2 mi N Agua Caliente (Cape District) Baja Calif.

At dusk found a number of large bats flying down the canyon out of the hills. Almost all were high and flying straight. Of these shot 1 Dasypterus. Also present were Tadarida femorosacca and Pipistrellus hesperus (see journal)

May 30 Same location

This evening went up the canyon a little way, above the dam which is here. There are several pools of water of which one by the dam is the largest. The bats again flew high and straight, a few coming down later within range. We could distinguish the Dasypterus from Tadarida which had narrower wings and faster flight. Later some began to circle and to come

Murray
1948

2

Dasypterus ega

May 30 El Chorro, 800± ft., 2 mi W Agua Caliente (Cape District) Baja Calif.

Back up the canyon. A number flew around the pool by the dam. Shot 2♂, 1♀.

May 31 Santa Anita, 800± ft., (Cape District), Baja Calif.

Found a number flying a dusk while next to a long narrow water ditch with many palms and other verdant growth around it. There was also a dense growth of sudan grass. The bats appeared from the north or northwest where could have come from palms, and flew fairly high. Also there were Myotis velifer, pipistrellus and a few Tadarida femorosacca. Shot 3♀. (See journal)

June 1 6 mi N San José del Cabo, 250± ft., Baja Calif.

Found Dasypterus flying first and fairly numerous. At 6:50, shortly after they had begun, saw one circle very low and flying slowly, entered the hanging dry leaves of a small palm of which there were several. When I poked with a stick it flew out and I shot it (♀). Shot 1 other ♀ flying. (See journal)

June 2 Same location

Today in the small group of palms, Dr. Benson poked around with a stick and scared out about a dozen (In the morning I shot 1♀. This seems conclusive evidence of where they live at last.

Murray
1948

1

Antrozous murina

Apr 26 Mina La Fortuna, 2350 ft., 2 mi N Laguna Seca Chapala, Baja Calif.

Caught 8 last night in the tunnels of the mine, hung up. There are several ~~or~~ inclined shafts which lead down to a number of horizontal tunnels on two levels. (See journal) Highest temperature was 72° in the lowest tunnel.

Apr 30 San Ignacio, 5000 ft., Baja California

Dr. Benson caught one in a room of the mission with stone walls and roof during late evening.

May 24 El Carrizalito, 1700 ft., 5 mi N Santiago, Baja Calif.

Found them numerous in the large brick building here, which has all the walls completed but doors and windows missing. First saw a clump of six hanging at the top of an open doorway downstairs, then several hanging in an upper corner of the large stairway well. All of these were sluggish and reluctant to fly even with a net over them and scraped against them. After being stirred up they flew around the halls upstairs and individuals were seen in 3 downstairs rooms. The two corners over the stairway seemed to be favored as hanging places and several times bats returned to rest there. In all I caught

Murray
1948

2

Antrozous minor

May 24 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.

3 and Dr. Benson and Quast 4 each

May 25 Same location

Tonight there were only a few present. They would hang up one or two at a time above the stairs, but were very touchy and the flashlight was sufficient to send them flying. They would fly around in the large space over the stairs, and back and forth between the open wings of the building. Some entered a large room adjoining. Though the 2nd floor was a complex combination of halls and rooms, the bats occupied only a limited part. Tonight none were downstairs. Caught 1 in the large room and 1 flying in the hall.

May 27 Same location

Coming in at 9:00 PM, found 1 bat hung in the usual corner over the stairway. One was flying downstairs and several in the hall upstairs. Chased them around several times, in the course of which they disappeared out various doors and windows. Each time I waited several minutes and returned, or stayed on the steps until some came in. They reappeared always through the passageways from

Murray
1948

3

Antrozous minor

May 27 El Carrizalito, 1400 ft., 5 mi N Santiago, Baja Calif.

The wings, usually not all staying away longer than 3 or 4 minutes. Caught 3 by laboriously chasing them with a net.

These bats acted differently than the others in manner of flying. None entered the upstairs room which had been much used two³ nights ago. They did not fly back and forth between the wings and did go down to the other end of the building frequently. Outside of 1 at first and later 2, they didn't hang above the stairs.

After quite a while I found out why. Under the stairs to the 3rd floor and partially concealed by a hanging ledge, about 11 feet high from the hall floor, were hanging 3 Antrozous. A small pile of fresh droppings on the floor indicated that the location wasn't more than 2 days old.

Either different individuals had arrived or old ones were scared into changing places, probably the former since they acted differently. The 3 were sluggish and wouldn't move. In the course of scraping them off, they slid by and escaped. Shortly after there were more which were awake and ready to fly. Caught 2. Later as many as 6 were hung there and Dr. Benson caught several.

Murray
1948

1

Tadarida mexicana

Apr 11 Punta San Felipe, 50± ft., Baja California

Shot one flying overhead at dusk. The camp is near the seashore, with rocky hills on all sides. Several of these have been seen flying around each evening. (See journal)

Apr 18 Cerro Prieto, 20 mi SSW Mexicali, Baja Calif.

Camped on an irrigation ditch among many mesquites. The mountain is quite nearby. Quast shot one this evening and several have been seen at dusk.

Apr 29 San Ignacio, 500 ft., Baja California

Hunted in the Mission for bats. Probing in a crack between a wooden door and the stone wall caused a great stream of *Tadarida* to pour forth. In another place probed in a crack in the stone wall about 18 ft. high. They could be heard squeaking beforehand. Came out in groups of 5 or 6 at a time, then 2 or 3 with brief intervals between. The crack felt like it widened out into a sort of chamber.

After being disturbed, a great number of bats gathered in the mission and flew around in the inside of the dome, close to the surface, in a clockwise direction. Just a few deviated from this and flew in and out of the stream.

The specimens were divided among the four of us.

Murray
1948

2

Tadarida mexicana

May 2 Mulegé, 25 ft., Baja California

Hunted in a storeroom in the government building here, where we could hear squeaking from the ceiling. The walls were plaster, the ceiling wood with supporting beams. Trodded in the long crack where ceiling and wall joined at one end but no bats would come out. Tried smoke and finally drove them out by prolonged pounding. Caught 20 ♀, 2 ♂, while some more escaped.

May 16 Triunfo, 1700 ft., Baja California

Found an intact, 2nd story room of an old brick compound which had mostly fallen down. One wall was missing, the rest plaster. The ceiling was wooden with beams running across, of which some were double with a $\frac{1}{2}$ to $\frac{3}{4}$ inch crack between them. Here were bats in great numbers, all *Tadarida* that we found except 2 *Myotis velifer* mixed in, and 3 *Eptesicus fuscus* which flew up from below. Netted 92 in all, most of which chewed their way out of the sack and were gone by morning.

May 19 Same location

Levy and I returned to the same place, found the numbers much diminished. Those present were excitable and flew

Murray
1949

3

Tadarida mexicana

May 19 Triunfo, 1700 ft, Baja Calif.

more readily. We caught 10 ♂, 6 ♀ which I put up as alcoholics. Also found 2 Eptesicus fuscus with them.

June 1 6 mi N San José del Cabo, 2500 ± ft., Baja Calif.

Shot 1 flying at dusk near camp. Bats were fairly abundant here but few appeared to be this kind. There is a hill nearby with many granite outcroppings. (See journal)

June 12 La Laguna, 1200 ± ft., Sierra de la Laguna, Baja Calif.

Bats here are not too common, of which I recognized several Tadarida and shot 1 ♂. All of these seemed to fly straight up and down the lagoon, not very high.

June 13 Todos Santos, Baja Calif.

Flew in a great swarm over the cultivated fields in town, mixed with Lasipterus and pipistrelles. They were feeding, but still flew rapidly. Shot 2 ♀

Murray
1948

1

Tadarida femorosacca

May 30 El Chorro, 800 \pm ft., 2 mi W Agua Caliente, Baja Calif.

Located beside a dam, NW of which is a deep canyon, full of rocks, and running up into high rocky hills. In the evening a number of bats came flying out of the hills straight and high, starting at about 6:45. Later some of them came a little lower down the canyon. We could recognize the femorosacca by large size, noticeably narrower wings, and a sort of hunched up appearance of the shoulders. They flew very fast. When it was becoming dark they flew around over the pond behind the dam. There were several pools further up which they did not seem to go to. Shot 2 ♀. There were also many Desopterus flying.

June 4 6 mi N San José del Cabo, 250 \pm ft., Baja Calif.

We looked in a crack up the hillside where Dr. Benson saw bats enter early this morning. There was a large rounded granite outcropping and on its upper, outer exposed surface an exfoliation which left a crack of about $\frac{3}{4}$ ". Several bats came out, the first two looking like Tadarida mexicana; and several we caught were Myotis velifer. There was just 1 femorosacca pinned under the rock. The crack was almost completely filled with

Murray
1948

2

Jadarida femorosacca

June 4 6 mi N San José del Cabo, 250± ft., Baja Calif.

quano, about 1 foot of it in depth though very narrow. There were about 10 bats present altogether.

Murray
1948

Lepus californicus

Apr 11 Punta San Felipe, 50 \pm ft., Baja California

Saw one in a rocky, sandy and rather deep wash. Had fairly heavy ironwood, creosote, encelia etc. The rabbit ran a considerable distance up the wash when found by Quast, then back down about 200 yds when chased by me. Each time it stopped just short of entering cover.

Apr 12 Same location

In one week here that lone jack rabbit was the only one any of us have seen. The Mexicans say they should be abundant, though.

Apr 28 30 mi SE Mesquital, 600 \pm ft., Baja California

Saw one last night about 8:30 while setting out traps. It seemed confused by my flashlight, not knowing which way to turn and could be approached quite closely.

Today while hunting saw 3. Each time would run 30-50 feet and stop behind a bush. While at a distance and being followed they were inclined to hop slowly away for a short distance until hidden. The terrain was fairly heavily grown with brush with ocotillo, cardons, cholla and yucca. (See journal)

2

Murray
1949

Citellus leucurus

Apr 8 Punta San Felipe, 50± ft., Baja California

The leading truck has seen several on the way down here.

Today saw one near camp, running along the top of the cliff behind the beach, on rocky ground with a few creosote bushes.

Apr 10 Same location

Jewis shot one and trapped two among the rocks not far from here.

Apr 25 Mina La Fortuna, 2350 ft., 2 mi N Laguna Seca Chapala, Baja Calif.

Saw two along the road between El Marmol and here (see journal)

Apr 26 En route Cerro Prieto

Today saw several in the course of the day's travel - (See journal)

Apr 29 El Arco to San Ignacio

Saw 6 while traveling, and probably the lead truck saw more (see journal)

May 1 San Ignacio to San Lucas

Saw 4 while traveling.

May 17 Trujillo, 1700 ft., Baja California

Have seen a number here, mostly in the thick ramajo ceneza growing in sandy wash. Two were near a brush fence. Shot two today - one started up the rocky bank next to the wash and the other had run up a low branch of a bush.

Murray
1948

Citellus leucurus

May 23 Buena Vista, 25 ± ft., 23°38'N, 109°41'W, Baja Calif.

Found them common in the sandy area at the back of the beach, where grow small palo verdes, lumbos, mesquite and cholla. Shot 1 ♀.

Murray
1948

Citellus tereticaudus

Apr 13 San Felipe to El Mayor

I have seen one, and the lead truck several in the desert sandy stretches covered with ironwood, creosote, sotillo and encelia. They saw some going down to San Felipe also.

Murray
1948

Citellus atricapillus

May 9 San Jose de Comondin, 700 ft., Baja California

In the course of climbing the lava slopes for bat caves we have seen 3 of which Dr. Benson shot 1. These are covered with rock and have much cholla, pitahaya, ocotillo and other accompanying forms (See journal)

May 10 Same location

Saw three on the rocks along the road as we drove down the canyon.

Murray
1948

Thomomys Bottae

June 3 6 mi N San José del Cabo, 250±H., Baja Calif.

Have put out 10 traps, 5 in the sandy flat area around camp, where it is impossible to tell which mounds are fresh. The other 5 are in a corn field among the rows of corn, and where there has been regular irrigation. Here all were fresh workings. Caught 3♂, one in the morning, 2 in the afternoon. All were from the traps in the cornfield.

Murray
1948

Perognathus ~~penicillatus~~ ^{formosus}

Apr 7 Point San Felipe, Lower Calif.

A mouse was observed around the camp, which was located beside an empty house overlooking the shore. It was first noticed running about over the bare ground, filling its pouches and rushing off to empty them beneath the house. It was oblivious of any noise or of a flashlight shone upon it. At first motions frightened it briefly, but later it permitted people to walk nearby. Some seed was scattered on the ground and a live trap set. The mouse quickly carried off all the seeds, and after several false starts finally became caught. He was released and almost immediately returned to the same spot, as unafraid as ever.

Apr 8 Same Location

Tonight the mouse was out almost before it was dark. Some grain was put out beside where we are working and it has been carrying steadily since, rapidly shovelling its pouches full and streaking off to its hole beneath the house. Quast has succeeded in getting it to eat out of his hand.

Murray
1948

Perognathus formosus

Apr 7 E side Cocopah Mts, 21 mi SSE Mexicali, Baja Calif.

Had 50 live traps out in a sandy wash full of granite rocks and surrounded on three sides by talus covered slopes.

Ironwood, creosote and other shrubs grow in it. Caught 1. There were also 3 Perognathus spinatus, and 3 Peromyscus crinitus.

Apr 9 Punta San Felipe, 50± ft., Baja California

50 live traps set on the barren talus covered slopes had 1♀. These hillsides are steep,

very rocky shale, with sparse vegetation of creosote, encelia and a few others. Also

caught 5 Peromyscus crinitus and 1 Perognathus spinatus.

Apr 10 Same location

50 traps again in the talus held 1♂ 3♀. The area was just the same as above.

Murray
1948

Perognathus baileyi

Apr 16 Cerro Centinela, 3000 ft., 13 mi WSW Mexicali, Baja Calif.

Caught 4 ♂ 1 ♀ in 50 live traps set at an interval of 50 to 70 feet in a sandy wash which ran near to the base of the mountain. There was mostly ironwood and creosote with some other bushes. With the mice caught 2 Perognathus ^{spinatus} and 4 Lipodomys merriami.

May 16 ⁵⁰Trinido, 1700 ft., Baja Calif.

Set traps around the brush fence enclosing a corral, and also inside along a patch of ramajo ceniza. Caught 2 ♀ (see journal)

Murray
1928

Perognathus arenarius

June 7 Punta Gasparina 23° 16' N, 110° 09' W, 10± ft., Baja Calif.

Camped in a sandy wash near the sea. On one side is a low hillside of soft sand and fairly thin brush, mostly leucos and ocotillo. Set out 100 live traps, half in the wash along thick patches of romarillo and other plants, and half on the hillside. Traps in the wash caught 2♂, those on the hill 3♂. (See journal)

Murray
1948

Perognathus fallax

Apr 25 / 2 1/2 mi S on road El Marmol, 2200 ft., Baja California

Put out 50 live traps on granite hard
packed sand among large granite boulders.
There were many cardons, cirios, cholla,
creosote and small brush. It was a bright
moonlight night. Traps set 50 feet apart.
Caught 1 ♀. Also got 1 Peromyscus eremicus

Murray
1948

Perognathus spinatus

Apr 6 Cocopah Mts, E side, 22 mi. SSE Mexicali, Baja Calif.

50 live traps set in a rocky, sandy wash caught 2♂. The vegetation was principally creosote and ironwood, and talus covered slopes were all around.

Apr 9 Punta San Felipe, 50± ft., Baja California

Out of 50 live traps caught 1♀. These traps were set on the talus slopes of the steep hills near the shore. The distances were about 25 feet between traps.

Apr 10 Same location

50 traps in the same type of rocky area had 1♂ 2♀. Tonight there is one running freely around in back of the house in which we are camped. It comes out of a hole, is a little timid of movement, but ignores the light. The house is on a sandy flat, but there is a rocky slope just behind on which *spinatus* have been taken.

This species seems quite abundant up on the talus rocks, but was not caught in sand.

Apr 13 9 mi W San Felipe, 700± ft., Baja California.

The mountains here were all granite, of a yellowish gray color, greatly decomposed. The slopes were rugged and rocky, with light growth of creosote and other bushes with some acotillo. 50 traps were set 25 ft.

Murray
1948

2

Perognathus spinatus

Apr 13 9 mi W San Felipe, 700 \pm ft., Baja California.

apart, and about 30 ft up the hill from a sandy wash - caught 3 ♀.

Apr 16 Cerro Centinela, 300 \pm ft., 13 mi WSW Mexicali, Baja Calif.

Had out 50 live traps in a wash below the mountain. Most of it was sandy with a number of ironwood trees, creosote, indigo bush and others - rather sparse. There were 1 ♂ and 1 ♀ each in one of the rockier spots. The rocks, however were quite small.

The night before traps were in a rockier area of the wash and caught no spinatus

Murray
1948

3

Perognathus spinatus

May 5 Bahía Concepción, 50± ft., Baja Calif. - 13 mi SE Mulegé

Had out 50 museum special mouse traps on a hillside of brown volcanic rock, some large covering it densely. There was some ootillo, copal, creosote with other thorny bushes. The line crossed two draws. Caught 2 ♂ 4 ♀ and 1 discarded, most of the catch being down in the draws.

Also got 5 Peromyscus eremicus and 2 Neotoma lepida. The interval between traps was about 50 ft.

May 6 Same location

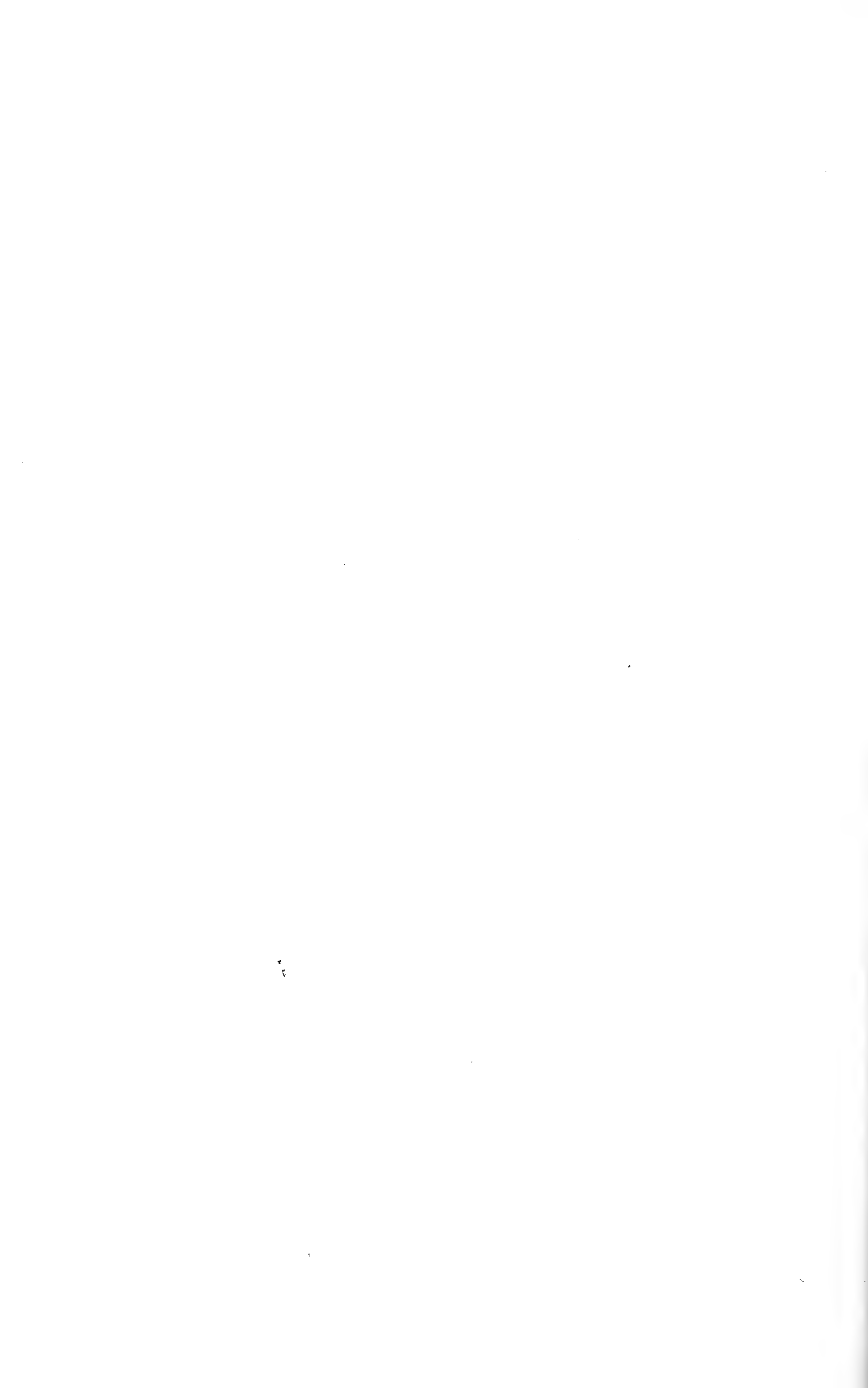
This time put out 50 live traps in almost the same place, but running up both sides of the large draw. The terrain was the same, save having denser vegetation.

Took 4 ♂ 4 ♀, with the catch very predominantly on the ~~east~~^{west} slope where the line was a little deeper in the canyon. (running N-S)

There were also 4 Peromyscus eremicus.

May 7 Same location, sea level.

Put the traps in a variety of locations: 15 along the base of the cliffs by the road and in salicornia which caught 2; 5 in salt marsh with more salicornia caught 1 though within 30 ft. of rocks. 15 in an area of shell fragments extending up the hillside into the rocks caught 1, 15 more



Murray
1948

4

Perognathus spinatus

May 7 Bahía Concepción, sea level, 13 mi SE Mulegé, Baja Calif.
were on the rocky flatter part which led up the hill previously trapped on. These caught nothing but about 9 out of 10 were sprung in one part of the line.

May 8 Rancho Cadajé, SW end Bahía Concepción, Baja Calif.

50 live traps were set mostly among thick bushes called dulce mangroves which grew in a belt along the shore

May 10 San José de Comondú, 700 ft., Baja Calif.

Caught 1♂ in the 50 live traps on the slope SW of town. This was a surface of lava rock on which grew, pitahaya, pitahaya dulce, cardons, lumboi, ocotillo and other bushes moderately thick. The traps were low on the slope, just above a row of houses.

May 15 4 mi N La Paz, S.L., Baja California

Caught 1♂ in 50 live traps set on rocky hillside, where there were a number of boulders also. Several kinds of brush and cactus growing there. Yesterday caught 2 Peromyscus eremicus there (see journal)

May 17 Trujillo, 1700 ft., Baja California

This time had traps along a brush fence which enclosed a sandy corral 150 x 60 yds. This was surrounded by

Perognathus spinatus

May 17 Trumbo, 1700 ft., Baja California
ramajo ceniza with a strip of it also
running along one side. The rest of
the inside was mostly bare sand with
a few orange trees. Set the traps mostly
around the outside and the rest at
brushy places inside. Caught 2♂, 2♀. Also
there were 2 Perognathus baileyi.

May 18 Same location

Set 50 live traps, this time up
a sandy wash and along its rocky bank,
mostly among ramajo ceniza and yerba
de la . These nights have been
brightly moonlit. Caught 1♂, 2♀.

May 19 Same location

Put traps around the brush fence of
the nearest rancho's cornfield. A narrow
wash and rocky bank above ran along one
side, and I put most of the traps here.
The field itself was mostly bare, with a
few large mesquites at the ends. This time
caught 4♂, and also 1 Peromyscus eremicus.

May 20 Same location

Traps were largely in the wash, along
the rocky banks of the wash, or on the
hillside. Tried to spot them in front of
mouse holes but without success. ^{the} moonlit.
Caught 1♂ and 1♀. Also had 1 Peromyscus eremicus.

Murray
1948

6

Perognathus spinatus

June 3 6 mi N San José del Cabo, 250± ft., Baja Calif.

Had out 50 live traps in the flat sandy area near camp. Part of the traps were set at the edge of dense brush - mostly ramajo ceniza. The rest were beside scattered bushes and piles of dry brush. Caught 3 ♂, 2 ♀, mostly around the brush piles and more open ground. Also caught 1 Dipodomys merriami.

June 7 Punta Gasparina, 23° 16' N, 110° 09' W, 10± ft., Baja Calif.

Set 100 live traps, half in the wash next to dense thickets of bushes and half on the adjoining low hillside with dry brush and largely soft sand. Caught 4 ♀. Also caught 5 Perognathus arenarius (see journal)

June 8 La Terajá, 5 mi SE Punta Gasparina, (ape list)

Put 50 live traps along both sides of a narrow stream bed. There was humbois and ocotillo mainly and the soil firm and a little rocky. Caught 1 ♂, 1 ♀. (see journal)

Murray
1948

Dipodomys merriami

Apr 13 Punta San Felipe, 50± ft., Baja California.

A number have been taken in live traps by the others in sandy desert or washes.

The traps are primarily mouse size however.

All my traps have been on rocky slopes.

Apr 12 9 mi W San Felipe, Baja California 700± ft.

Went hunting in the desert at about 10 PM and found two rats, both of which were much confused by the light- almost caught one by hand. They could not seem to find holes to go into and could not seem to make up their minds which way to go. Often they would run into a bush and right out again. The night was clear but moonless (see journal)

Many burrows and tracks had been seen in the daytime.

Apr 15 Cerro Centinela, 300± ft., 13 mi WSW Mexicali, Baja Calif.

Had 50 live mouse traps out in a sandy wash which ran below the mountain. Through

most of it were bars of small rock, and ironwood, creosote, indigo bush and several others were present in moderate quantity.

Checked the trap line at 9 PM ^{last night} and found 4 rats which I released. This morning there

are 7 more rats. I only caught one

~~Peromyscus~~ Perognathus formosus along

with them. Put up 3, 2♂ and 1♀, releasing the others. There was a moon through early night.

Murray
1948

2

Dipodomys merriami

Apr 16 Cerro Centinela, 300± ft., 13 mi WSW Mexicali, Baja Calif.

Last night moved my traps about one mile down the wash to the north, into a sandier part. The vegetation is a little thicker and seems greener, with more ironwood. The moon was up most of the night in a clear sky. The catch this time was 4 rats, all of which I released. This time also had 5 *Perognathus baileyi* and 2 *Perognathus spinatus*.

I am interested to note the reactions when these rats are released. Some jump out immediately when the trap is opened, even if held 5 feet in the air, then jump their way at top speed to the nearest bush. Others will come out into my hand, look around, and haltingly start away, usually picking up speed after a foot or so.

At San Felipe, rats which were released around camp, a house, and surrounded by rocky ground or hills, generally remained on the spot. One was found on the front porch picking up seeds in broad daylight, and it took quite nearby movements to frighten him. Another was found in the bread (see journal). Here at Cerro Centinela one which was released at camp in his habitat but some distance from home, insisted in hiding in the equipment. Holes were available

Dipodomys merriami

Apr. 28 30 mi SE Mesquite, 600± ft., Baja California.

Had 50 live traps out on hard packed rocky ground, with ocotillo, yucca, cholla, cardons and several kinds of brush. There were many open spaces. Caught 1 ♀, although 3 others opened by coyotes may have also contained them.

May 12 24.3 mi SE El Refugio, 100± ft., 24°33'N, 111°35'W, Baja Calif.

Set 50 live traps on the flat dry plain of packed silty sand and bearing fairly dense cholla, pitahaya agria, and some cardon, ocotillo, matorra and pitahaya dulce. Caught 3 ♂, 1 ♀, with one trapped chewed open and many closed but empty. Traps were 60-70 feet apart. Also took 2 Dipodomys agilis.

A dense fog came in during the night.

June 3 6 mi N San José del Cabo, 250± ft., Baja Calif.

Set out 50 live traps on the flat sandy ground near camp. Part were next to thick clumps of ramajo ceniza, the rest more in the open and near dry brush piles or scattered bushes. Beside one of the latter caught 1 ♀

June 17 W end Llano de Hircy, 50± ft., Baja Calif.

Set 50 live traps on two ocotillo-cholla-pitahaya covered sand dunes of very soft sand. Also set out 7 rat traps near

Murray
1948

4

Dipodomys merriami

June 17 W end Llano de Hurey, $50 \pm$ ft., Baja Calif.

hangaroo rat holes on the barren flat
between them. Got 1♂ 1♀ adult and 1♂ 1♀
young. The rat traps had only² mice. (see journal)

Murray
1948

Dipodomys agilis

Apr 21 Agua Hedionda, 32°30' N 116°16' W, Baja Calif.

Located in the middle of a dense "forest" of *Adenostoma sparsifolia*, growing from 4 to 7 feet high. At the base are no leaves and the ground is covered with a little grass. There is some sage brush in more open areas and a little manzanita and *Ceanothus*. Frequent rabbit trails and narrow washes are encountered. 50 live and 50 museum special mouse traps took 3 rats in the jump traps only - 2♂, 1♀.

May 12 24.3 mi SE El Refugio, 100± ft., 24°33' N, 111°35' W, Baja Calif.

50 live traps produced 1♂, 1♀. These were set on packed, silty sand on which grew fairly thick cholla and pitahaya agria, with some cardon, pitahaya dulce, ocotillo, lunboi matacora. The traps were 60-70 feet apart. A heavy fog rolled in during the night. Also caught were 4 Dipodomys merriami, one trap was chewed open and many were closed but empty.

June 17 W end Isla de Hickey, 50± ft., Baja Calif.

Caught 2♀ in 50 live traps set on sand dunes with ocotillo, cholla and pitahaya. There were also 7 rat traps set beside kangaroo rat holes on the barren flat, but visited only by mice.

Murray
1948

Dipodomys agilis

June 30 10 mi SE Mesquital, 4000 ft., Baja Calif.

the open 14 yds. away.

1 unsexed - ran immediately and quickly to a bush 15 yds. When chased went 30 yds more and disappeared.

♀ - Hopped around a little, appeared to search for seeds, sniffed my fingers; then hopped away slowly at first and faster for 50 yds. where disappeared in brush.

July 1 Same location

50 live traps were split, 25 in the wash across a very sandy dune-like area, and 25 on the flat. In the wash caught 1 ♀, and 1 ♂ released. The others had 1 ♂, and 2 released (1 ♀)

Observations on release: ♂ in wash - looked around, allowed me to handle it, then slowly hopped away, stopping at intervals. Slowly entered a hole under a bush.

1 unsexed - ran about 12 feet away and disappeared in a bush

1 ♀ - lost, didn't know where to go

July 2 Same location

50 live traps on the usual flat, and 50 across a section of sparse very small shrubs. 20 of these extended down toward the wash where there was fairly soft sand but still brush.

Murray
1948

Dipodomys agilis

June 20 San Jorge, $25^{\circ}44'N$, $112^{\circ}09'W$, Baja Calif.

Had 100 traps set, of which 50 were across the sandy hill back of the beach. One of these had 1♀. (See journal)

June 28 10 mi SE Mesquital, $400 \pm$ ft, Baja Calif.

Had put out 50 live traps on the flat ground near camp. The ground was hard and rocky; the vegetation mostly yucca, ocotillo and pitahaya agria, with brush, fairly thick. Caught 3♂

June 29 Same location

Set 100 traps, 50 on the flat again and 50 in a wash to the east, along the sides of a deeper channel with sandy bottom and greener bushes. The latter had 1♂, 1♀. Traps on the flat had 4♀, 1♂, ~~Made observations on them as follows:~~
~~1♀~~ all released.

June 30 Same location

Put out 100 live traps, all on the yucca and brush ground around camp. Caught 4 (1♂, 2♀). Released all and made observation on their behavior as follows

♀ - Wandered around aimlessly; did not know which way to turn. May have been one released yesterday and not yet settled

♂ - Looked around bewildered for a few moments, then ran via a bush to a hole in

Murray
1948

Dipodomys agilis

July 2 10 mi SE Mesquite, 400±ft, Baja Calif.
Caught 3♂, 2♀, all released.

Observations: ♀ - Went under a bush and stopped for a while. Then started slowly a few hops at a time until running rapidly. Went at least 30 yards and disappeared.

♂ - Was in next trap. Started off slowly, picked up speed. Went about 30 yards to the area where the other disappeared. It seemed to ~~poke~~ go down a hole in the open, and when I looked there a rat poked its head out, then ducked back.

♂ - After pausing under a bush, ran 20 yards to where I lost him.

♀ Quickly ran 20 yards, at first to a cactus and then almost at right angles, maintaining speed.

♂ - Ran 20 yards and disappeared under a bush.

July 3 Same location

50 live traps set near camp caught 1♂

July 5 Same location

Set 50 traps, 30 on the bank at the edge of the wash, the rest on the flat. Caught 3♂, 2♀.

July 7 Same location

50 traps were set, part on the brushy flat and part in the open area with only small shrubs. Caught 2♀, and

Murray
1948

Dipodomys agilis

July 7 10 mi SE Mesquite, 4000± ft., Baja Calif.

also 2♂, 2♀ released.

Observations: ^{on release.} On the open plain.

♂ After pausing, ran 12 yards to a hole under a lone cholla.

♂ Ran immediately 8 yds. to small hole in the open.

♀ - Sat for a moment, then ran 2 yds to a scratched out hollow in the earth where it threw itself down and rolled briefly, almost on the run. Then ran off rapidly in a large arc, sometimes zig-zagging - went at least 40 yards and was still going when I lost it.

In the brush - ♂ Went 13 yds + disappeared.

♀ - Went several yards to gopher mounds under a cactus, where without digging repeatedly threw itself on its side and half rolled, half pushed forward against the earth. Then quickly got up and repeated, doing it about 12 times, each in the same manner.

Murray
1948

Peromyscus crinitus

Apr 7 E side Cocopah Mts., 21 mi SSE Mexicali, Baja, Calif.

Took 3 in 50 live traps. These were set 25 ft. apart across a broad sandy and quite rocky wash. There was considerable creosote, some ironwood and other bushes. On three sides were rocky hills.

Apr 9 Punta San Felipe, 50 ft., Baja, California

50 live traps were set in rocky, talus covered hills, mostly up high. These were located near the shore, and were sparsely vegetated, some areas having nothing but an expanse of shale. The traps caught 3♂, 2♀.

Apr 10 Same location

Had out 10 Schuyler traps, in the same area but spotted in front of wood rat nests. Caught 1♂, 1♀. The 50 live traps, again in similar terrain but with somewhat volcanic ^{rock} and down lower, passing partially through a deep draw. There was perhaps a little more vegetation. These had 2♂

Apr 18 Cerro Prieto, 20 mi SSE Mexicali, Baja Calif.

50 live traps and 15 museum specials were set among the lava rock slopes of the crater, NE end. There was a little creosote and other bushes (see journal). The live traps had 1♂, 1♀ and one immature which was released.

Murray
1948

Peromyscus californicus

Apr 21 Agua Hediondo, 32° 30' N 116° 16' W, Baja California

Put out 50 live and 50 museum special mouse traps in dense growth of *Adenostoma sparsifolia*. It grew from 4 to 7 feet high and was foliated only on the upper branches. There were some more open spaces with manzanita, sage brush and the more common species of *Adenostoma*. The traps caught 1♂ and 1 imm., both in the jump traps.

Murray
1948

Peromyscus eremicus

Apr 25 12½ mi S by road El Mame, 2200 ft., Baja California

Took 1 ♂ among the large granite boulders with cirio, cardon, cholla, creosote and small gray shrubs. Very dry. The sand was coarse, granitic and hard packed. Had out 50 live traps spaced 50 ft. apart. Bright moonlight night

May 5 Bahía Concepción, 15 mi SE Mulgá, 50± ft., Baja Calif.

50 live traps, set on a rocky hillside, caught 4 ♂, 1 ♀. (See journal)

May 6 Same location.

50 live traps set in about the same locality caught 2 ♂, 2 ♀. (See journal)

May 18 Irinifo, 1700± ft., Baja Calif.

Had out 50 live traps around a fenced in cornfield. Most were along a sandy wash and rocky bank at one side. Caught 1 ♂.

May 20 Same location

Put the traps in the sandy wash and along its rocky banks. Caught 1 ♂

June 11 La Laguna, 6200± ft., Sierra de La Laguna, Baja Calif.

Had set 42 museum special traps very close together at the edge of the small stream by camp, aiming for shrews. Caught 1 ♂. Also caught a shrew. (See journal)

Murray
1948

Peromyscus maniculatus

Apr 21 Agua Hediondo, 32°35'N 116°16'W, Baja California

Had out 50 live and 50 museum special mouse traps in dense growth of *Adenostoma sparsifolia*. This was from 4 to 7 feet high with bare lower limbs but growing close together. Here and there were open spaces with sage brush, and some manzanita and *Ceanothus* was mixed in. (See journal). The ~~snap~~ traps had 2♂, 1♀ and 2 discarded. In the live traps were 3 which were released.

June 18 San Jorge, 25°44'N, 112°07'W, Baja Calif.

Set out 115 traps, 50 live and the rest museum specials, expressly to catch *Reithrodontomys*. Part were among bushes back of the beach, others along the edge of the strip of mangroves running along the shore or on the strip of tide washed *salicornia* behind; the rest by dulce mangroves in back of the *salicornia*. (Fully described in journal) The ground under most of the traps was muddy. Caught 2♂, 4♀ *maniculatus*, all in the traps along the mangroves or in *salicornia* which had been washed over by the tide. The mice were almost all dry.

June 19 Same location

This time had set 30 snap traps along the edge of the mangroves as before,

Murray
1948

Peromyscus maniculatus

June 19 San Jorge, $25^{\circ} 44' N$, $112^{\circ} 09' W$, Baja Calif
and 20 traps extending well into the
swamp in thick tangled growth about
4 ft high. There was soft mud with many
dead leaves and branches on its surface.
Put 4 traps up high on branches of larger
mangroves, and 2 on a dense matting
of mesembryanthemum which also grew
up in the air. The rest were on the
ground. Caught 8 ♂, 7 ♀, of which the
largest percentage was in the swamp.
Two of the traps in trees had mice, and
both of those on mesembryanthemum.

June 20

Murray
1948

Peromyscus truei

June 12 La Laguna, 6200± ft., Sierra de la Laguna, Baja Calif.

Set traps (museum special) along a stream SE of camp (see map). This was drying up and no longer had running water, only extensive pools. Much of it was out in the open. There were 45 traps, set close together for shrews along the water edge. Caught 3♀, 1♂.

June 13 Same location

Left the traps out in the same place and caught 1♂, 1♀.

Murray
1948

Neotoma lepida

Apr 9 Punta San Felipe, 50± ft., Baja California

Ten Schuyler traps were each placed in front of a wood-rat nest with droppings evident. These all were holes in the rocks located on talus covered hillsides (see journal). Vegetation was sparse - some creosote, encelia and a few others. The traps caught 2 ♂ 1 ♀. There were also 2 Peromyscus crinitus in the traps. Reset them all, moving those which had rats. There are quite a number of nests on these hillsides.

Apr 10 Same location

This time the traps had no rats, only 2 Peromyscus crinitus.

Apr 18 Cerro Prieto, 20 mi SSE Mexicali, Baja Calif.

Had 7 Schuyler traps out, 6 on the rocky slope inside the crater and 1 high up on the mountainside. All was dark lava rock. (see journal for description) A little creosote and some other bushes. The single trap was in front of a wood-rat burrow with fresh droppings - caught one but with crushed skull. The other six held one ♂

May 5 Bahía Concepción, 30± ft., 13 mi SE Mulegé, Baja Calif.

Had out 50 museum special mouse traps along a rocky hillside. Growing there were ocotillo, creosote, copal and other

Murray
1948

2

Neotoma lepida

May 5 Bahía Concepción, 30± ft., 13 mi SE Mulegé, Baja Calif.
brushes. Each rat was toward the bottom
of a draw where the rocks were quite
large (2 ft diam) and piled higher. One
rat was killed, the other caught by the
neck but very much alive.

May 15 4 mi N La Paz, 30 ft., Baja California.

Set 7 Schuyler traps, each beside the
opening of a nest and with droppings
nearby. These were on a rocky hillside
which came within 150 yds. of the seashore.
Most of the rocks were broken fragments,
but a few parts had some boulders under
which all the nests were found. Caught
1 ♀ and found another trap snapped
and dragged about 5 feet where the rat
got away.

May 16 Same location

5 traps, similarly set, caught nothing.

May 20 Trunfo, 1700 ft., Baja Calif.

Have seen several nests in the wash
here, some built of dried sticks and
some under large rocks along the edge.
Growing in the sand is mostly yerba de la pascua
and ramajo ceniza, quite thick. Set 2 Schuyler
traps, one in front of a stick house and the
other by a rock nest. Each caught a rat.
(see journal)

Murray
1948

3

Neotoma lepida

May 26 El Carrizalito, 1400±ft., 5 mi N Santiago, Baja Calif.

Above the unfinished tuberculosis sanitarium in which we are camped is a steep hillside thickly scattered with large granite boulders and bearing many wild figs, mesquites, copals and other trees, plus some groups of palm trees. Saw a number of wood rat nests under the rocks. Set 13 Schuylers, avoiding these nests for the most part. One trap caught a young ♂.

June 12 La Laguna, 6200±ft., Sierra de la Laguna, Baja Calif.

Set out 6 Schuylers as follows: 3 in a large circular patch of prickly pear with a boulder and a tree in the center, located out in the open; 1 each in small cactus patches and 1 in a large patch along the edge of the trees. Caught 1♂, 2♀, 1 discarded. Each rat was in a separate clump of cactus. Dr. Benson had 4 traps in one large clump and caught 1 rat, making it appear that only one lived in each no matter what the size.

June 29 10 mi SE Mesquital, 400±ft., Baja Calif.

Murray
1948

Ondatra zibethica

Apr 16 Enroute Cerro Prieto

As we passed through cultivated farmland, the road ran beside irrigation ditches. In one saw a muskrat swimming about 1 hour before dark. There was grass on the banks and a few green shrubs, some mesquite.

Where we camped beside an irrigation canal we could hear muskrats working. One was under a mass of bamboo cuttings from across the water; made loud sucking noises. There were many mesquites growing along the bank.

Murray
1948

Canis latrans

Apr 8 Punta San Felipe, 50± ft., Baja California

Jewis found two on the beach in front of our camp at 9 PM. Later Dr. Benson and Jewis went out and picked up the eyeshine of four of them but could not get within good range. The setup is such that they must pass through a draw to reach the water, with talus covered bare hills on either side. North-west over the hills is a stretch of sandy desert. The predominant vegetation is creosote, sotillo, encelia and copal, with the hills quite bare.

Apr 9 Same location

Dr. Benson had one coyote in one of two steel traps, set in the aforementioned draw.

Apr 11 - Same location.

From our beds just before sunrise we could see a coyote on the flat area above the beach. He appeared to be investigating a dead coyote carcass left there the night before, nosing around with tail between legs. Then he became aware of us and disappeared over the hill behind our camp.

Dr. Benson's ^{live} traps which have been set in sandy wash. were bothered more than once by the animals. They pick them up and carry them several yards. Usually getting the mouse out but sometimes not.

Murray
1948

Bassariscus astutus

May 10 San Jose de Comondru, 700 ft., Baja Calif.

We have seen droppings several times on the rocky slopes on both sides of town. A cave at the base of the rocky cliff high up on the SW side had many droppings and there was one dried up body in it (see journal).

Murray
1948

Odocoileus hemionus

June 13 La Laguna, 6200±ft., Sierra de la Laguna, Baja Calif.

Our Mexican guides shot 1 when we started down into the valley, and got 2 while hunting today. Another Mexican shot 1 going down the mountainside. The guide said that each family from the ranches down below shot an average of 2 per month, which should explain why they are scarce. Dr. Benson has the skulls for all 4 deer.

REPTILES

Dipsosaurus dorsalis

June 3 6 mi N San José del Cabo, 250± ft., Baja Calif.

Have seen several on the flat sandy terrain here, among ramajo ceniza and yerba de la pasma. They seem to have a characteristic alert position with head and shoulders propped up high on the front legs, while the hind quarters rest flat on the ground. When startled they run quite rapidly for a few feet and stop, at which point will remain indefinitely motionless or nearly so—how long I never had time to find out. With several I very slowly and carefully approached until feet or hands were within one foot of them before they became alarmed. Saw one chasing another, presumably a pair. The first would alternately run a little and walk a few steps, while the other followed at a respectable distance of a foot or two, frequently bobbing erratically. This motion at times appeared to be on one forefoot at a time.

Murray
1948

Callisaurus draconoides

Apr 11 Punta San Felipe, 50± ft., Baja California

Have seen a number of them here, though not really common. They have all been on sandy desert terrain with encelia, ocotillo, and creosote. Characteristically, they permitted me to approach no nearer than about 15 feet, then rushed off at high speed. Frequently zig-zagged, tail curled over back. Usually they stopped just short of a bush and watched, with head and shoulders raised up high. After that almost any movement was enough to send them the rest of the way in.

Apr 28 30 miles SE Mesquite, 600± ft., Baja California

In the course of about 1½ hours hunting saw 23. The ground was mostly hard packed rocky surface with some sandier areas. Mostly cholla, ocotillo, yucca and some cardone with brush; many open spaces present. The lizards exhibited much the same behavior as above, though often less timid. Usually the only way I saw them was after they rushed off from 10 or more feet away. They ran from about 10 to 30 feet at one quick rush, almost always stopping in the open just before entering a bush. Two or three steps then were enough to frighten

Murray
1948

2

Callisaurus draconoides

Apr 28 30 mi SE Mesquital, 600± ft., Baja California
them the rest of the way. Once hid, there was never any trace of them. Noticed considerable variation in size from about half adult on up. They strongly tended to be in more open areas.

May 20 Truinfo, 1700± ft., Baja Calif.

Very common here, seeming to live largely in brush fences or brush thickets. They sun themselves in the open, rarely more than 10 feet from cover, and are surprisingly tame. When approached they run several feet and stop to look back. Then if not too much frightened will remain for quite some time. Often they may be chased quite a distance, stopping each time and then running on a little farther. At no time did I see the prolonged sprint to cover of the more northern lizards. Tails were rarely curled up over the back, but usually raised in a small arc when running.

May 23 Buena Vista, 25± ft., 23°38'N, 109°41'W, Baja Calif.

Found them again common and tame here in the sand back of the beach, where grows palo verde, mesquite, lumber, and cholla. Some of these are quite reluctant to enter cover until driven, and permit

Murray
1948

3

Callisaurus draconoides

May 23 Buena Vista, 25± ft., 23°38'N, 109°41'W, Baja Calif.

approach to within 5 feet with care.

Watched one which consistently held its tail curled up over its back, even when at rest, and often switched it back and forth like a cat rather slowly.

Murray
1948

Gambelia wislizenii

Apr 28 30 mi SE Mesquite, 600± ft., Baja California

Came upon one while hunting in area of hard packed rocky surface. The vegetation was largely yuccas, ocotillo and cholla, with some cardohe and small brush. There were numerous open spaces. The lizard took off at high speed after I had approached quite near to it—traveled about 35 feet in a straight line and disappeared into a bush. It ran noticeably high off the ground, appearing to have little weight on the forelegs. Searching in the bush I found it crouched low against the ground in a shady portion. Did not move as I bent over it. When running, its tail extended straight back and clear of the ground.

Apr 29 10± mi SE El Arco, Baja California

While traveling in the lead truck, Mr. Benson reported seeing one run rapidly down the road and into a bush. Looking around we scared one up, probably the same. It ran about 25 feet into a bush in the same manner as before, at which time we couldn't find it.

Apr 29 20± mi SE El Arco, Baja California

Found one wobbling up the road toward us, apparently run over by the lead truck. It flattened out as I picked it up.

Murray
1948

Phrynosoma coronatum

Apr 29 20± mi SSE El Arco, Baja California.

The lead truck saw one on or by the road which then entered a bush. Here I found it trying to hide beneath the branches. Chased it to the other side where it rapidly dug in to the soft sand and dried leaves, seeming to melt out of sight. The area was very sandy, with thick growth of many cactuses, yucca, cardons, cirios, copals and brush.

Murray
1948

Urosaurus microscutatus

May 19 Trinunfo, 1700 ft., Baja Calif.

Shot with sling shot after first being seen on the rocky ground of a dry hillside. When first disturbed the lizard ran a short way up a small mesquite and remained motionless. Changed to another branch twice before I was able to hit it.

A male, the throat was a rich rusty orange with just a tinge of blue in several of the scales. Around the jaws and the rest of the ventral side was a deep flecked gray with the tail a little darker. Two long blue patches almost covered the belly, partially joined, deeper color toward the center.

Murray
1948

Cnemidophorus hyperythrus

Apr 24 San Fernando Mission, 1500 ft., Baja California

Shot one under the mesquites in the valley - thick growth with cow paths running through it and the lizard was along one of them. The area was not far from where the desert of the hillside met the mesquites, yet near the extensive ponds with salicornia and ~~sage~~ sedge. (see journal) Moved in slow jerky movements under the brush. Did not run when approached.

May 14 4 mi N La Paz, S.L., Baja Calif.

Saw several on the rocky hillside here. Each would run a short distance if much startled, then go about its business seemingly oblivious of my presence. They were continually on the move, walking with jerky, "nervous" movements, poking their noses under rocks, leaves and other objects in rapid succession, and bobbing their heads here and there with quick motions.

Murray
1948

Cnemidophorus tessellatus tessellatus

Apr 11 Punta San Felipe, 50± ft., Baja California

Hunted for three hours through the desert region northwest of camp - an encelia, creosote, ocotillo and copal association in either sandy or small rock terrain. Here the whiptails were very common and I saw more than 15 in that length of time.

Their reactions seemed to me hardly typical of a desert lizard. Though they are capable of considerable speed, and would run rapidly for a short distance, they preferred to walk with undulating movements toward the nearest bush, then wait to see if they were being chased before entering. Then they advanced in short gliding spurts, bobbing their heads as they did so. Once in the bush, I could practically trample on them before they would leave - often circling around and around. Then a short rush to another bush and the same thing repeated. After this had gone on for a while they usually disappeared down a hole, many of which were available at all times.

Found two up in the rough talus rocks on a hillside with only a little creosote for vegetation. Distance from the sand about 50 feet.

Murray
1948

Cnemidophorus tessellatus

May 18 Trujillo, 1700 ft., Baja California

Shot 1 today and have found them quite common around here. This is a canyon with a sandy wash and dense growths of ramajo ceniza and other bushes. Mesquites are scattered about. Rolling rocky hills are all around with dry bushes, mostly leucobai. Several live along brush fences and may be chased a long way up them, the lizard rushing several feet at a time and finally breaking out across open ground to a bush. A few appeared on the hillside. I have shot at several only to have them run rapidly for cover with a resounding crash, being very large. The one taken today behaved in this manner, as though untouched, but I found him about 10 feet away in a small hole in the bank, shot enough to knock over most lizards and by then very weak. When undisturbed, these walk most of the time or make an occasional short rush. They often bob their heads and seem to poke them into leaves or bushes with jerky movements, perhaps searching for food. Their heads seem to be characteristically held at

Murray
1948

Cnemidophorus tessellatus

May 18 Triunfo, 1700 ft., Baja California

a horizontal position, often sharply angled from the body when propped up on the fore legs. When running, the tail extends straight back but is clear of the ground.

May 19 Same location

Two ambled into camp from opposite directions almost simultaneously while we were skinning this morning. Each crawled leisurely among various objects on the ground, poking their noses under them as if making an inspection tour. One came within 5 feet of me and stopped. Then, raised on its fore legs, watched motionless for about 2 minutes before being frightened away by our movements.

May 30 El Chorro, 800 ft., 2 mi W Agua Caliente (Cape District)

As we were working in camp this morning, saw two come rushing down a steep sandstone bank, one chasing the other. The leading lizard kept a distance of a few inches, running most of the time and slowing to an undulating walk between bursts of speed. Several times while on the run it leaped forward about 3 inches and cleared the ground by at least an inch. Finally it ran straight up a vertical bank

Murray
1948

Cnemidophorus tessellatus

May 30 El Chorro, 800±ft; 2 mi W Agua Caliente (Cape District)
about 3 feet high. The following lizard kept
pace but did not leap. Dr. Benson shot
it, and it turned out to be a male with the
right hemipenis everted. (my catalog # 318)

Murray
1948

Phyllorhynchus decurtatus

July 6 10 mi SE Mesquital, 4000± ft., Baja Calif.

We were seated by the campfire well after dark when one appeared, crawling to within a foot of the fire and also close to me. When captured it remained calm, struggled little.

Murray
1948

Salvadora hexalepis

June 27 10 mi SE Mesquital, 4000 \pm ft, Baja Calif.

Found it at about 4 PM while setting traps. Was in an open space, motionless, not far from camp. In a few moments I made a move for it and it went to a nearby bush, where tried to elude me in the branches at the base. When captured it became quite violent, thrashing around and biting me several times.

Murray
1948

Crotalus cerastes

Apr 28 Punta San Felipe, 50[±] ft. Lower California.

After spending several minutes setting a trap I heard a faint buzz from under the rocks beneath my feet. The snake had remained quiet until then but was pinched by the rocks. It buzzed almost constantly as I tried to uncover it but made little effort to strike, seeking instead to escape through the rocks. The location was a steep slope of talus, almost entirely rock, but within 25 yards of a flat and sandy area. Probably it chose the rocks to rest in during the day, the time being about 3:30 PM

MIRKIN, L.

HIMELTOWN, CALIF.

AUGUST 8 - SEPTEMBER 11, 1949

CATALOGUE NOS* 608 - 835

JOURNAL

SPECIES ACCOUNTS

Birds

Mammals

Amphibians - Reptiles

NOS. 543 - 607 not accounted for.

CATALOGUE

Murray
1949

2

Catalog

Aug 9 Big Sagoon, Humboldt Co., Calif.

608	♀	6 emb 7 mm	<i>Peromyscus maniculatus</i>	163-80-22-17 ⁿ -14 ^c	18.5
609	♀	5 emb 6 mm	<i>Zapus trinotatus</i>	202-125-32-15 ⁿ -11 ^c	17.7
610			<i>Thamnophis elegans</i>		
611			<i>Bufo boreas</i>		
612			<i>Hyla regilla</i>		
613			<i>Ensatina eschscholtzii</i>	(with eggs)	
614			"	"	(with eggs)
615			"	"	
616			<i>Batrachoseps attenuatus</i>		

Aug 10 Big Sagoon, Humboldt Co., Calif.

617	♂	Test 15 mm	<i>Peromyscus maniculatus</i>	185-92-23-18 ⁿ -16 ^c	26.8
-----	---	---------------	-------------------------------	--	------

Aug 9 Same location

618	♀	no emb	<i>Myotis</i>	81-38-10-16 ⁿ -12 ^c	5.9
619	♂		"	82-34-11-15 ⁿ -11 ^c	6.0

Aug 10 Same location

620	♀	no emb	<i>Zapus trinotatus</i>	228-138-32-15 ⁿ -11 ^c	24.9
621	♂		<i>Sorex townsendii</i>	116-60-14-9 ⁿ -5 ^c	6.1
622			<i>Thamnophis sirtalis</i>		
623	♀	3 emb 12 mm	<i>Thomomys bottae</i>	205-63-30-6 ⁿ -4 ^c	129.5
624	♂		"	211-63-29-7 ⁿ -4 ^c	137.7
625			<i>Batrachoseps</i>		
626			<i>Rana aurora</i>		
627			"	"	
628			"	"	
629			"	"	

Aug 11 Same location

630	♂		<i>Sorex pacificus</i>	141-68-17-10 ⁿ -6 ^c	10.7
-----	---	--	------------------------	---	------

Murray
1949

3

Catalog

Aug 11 Big Lagoon, Humboldt Co., Calif.

631 ~~Sorex pacificus~~

637 ♀ ^{no}embryos *Zapus trinotatus*

214-134-32-15ⁿ-10^c 15.7

Aug 10 Same location

632 *Thamnophis ordinatus*

Aug 11 Same location

633 *Thamnophis ordinatus*

634 " "

635 *Bufo boreas*

636 " "

Aug 11 Big Lagoon, 550 ft., Humboldt Co., Calif.

637 ♀ ^{no}embryos *Sorex pacificus*

130-64-17-9ⁿ-5^c 9.2.

638 ♀ *Arundo rustica*

17.2

639 " "

17.1

Aug 11 Big Lagoon, Humboldt Co., Calif. ~~225-143-33-16ⁿ-11^c~~

640 ♀ *Zapus trinotatus*

225-143-33-16ⁿ-11^c 12.5

Aug 12 Same location

641 ♂ *Sorex vagrans*

100-42-13-8ⁿ-4^c 3.6

642 ♂ " "

96-40-12-8ⁿ-4^c 4.9

643 ♀ ^{no}embryos *Sorex townsendii*

118-59-14-9ⁿ-5^c 5.7

644 ♂ *Sorex pacificus*

133-68-17-9ⁿ-5^c 8.1

645 ♀ ^{no}embryos " "

128-60-16-8ⁿ-5^c 10.4

646 ♀ ^{no}embryos *Zapus trinotatus*

213-140-33-14ⁿ-10^c 12.7

647 *Sorex vagrans*

100-39-13-8ⁿ-5^c 5.2

Aug 13 Same location

648 ♀ *Sorex pacificus*

134-61-18-9ⁿ-5^c 11.5

649 ♂ *Microtus oregoni*

125-32-17-11ⁿ-5^c 21.0

650 ♀ ^{6 embryos} 8 mm *Microtus longicaudus*

167-54-22-14ⁿ-9^c 37.7

651 ♀ lact. *Zapus trinotatus*

236-152-35-16ⁿ-11^c 29.5

Murray
1949

4

Catalog

Aug 13 Big Lagoon, Humboldt Co., Calif.

652 *Sorex pacificus* 137-61-16-10ⁿ-5^c 10.1

Aug 14 Same location

653 ? *Neurotrichus gibbsii* 113-42-16 -- 9.2

654 ? *Sorex trowbridgii* 100ⁿ-40ⁿ-14-8ⁿ-4^c 5.3

655 *Sorex pacificus* 116-57-14-8ⁿ-5^c 4.6
~~139-58-17-10ⁿ-6^c 10.9~~

656 ? *Sorex pacificus* 137-65-18-10ⁿ-6^c 10.1

657 ♂ *Microtus oregoni* 126-33-17-10ⁿ-7^c 19.2

658 ♂ *Zapus trinotatus* 220-137-33-14ⁿ-10^c 18.6

659 ♀ no embro " " 231-144-34-16ⁿ-11^c 22.1

8 small
larvae

660 *Rhyacotriton olympicus*

larva 661 " "

larva 662 " "

663 ♀ *Ascaphus truei*

664 *Rana aurora*

Aug 15 Same location

665 *Sorex trowbridgii* 127-60-14-8ⁿ-5^c 7.0

666 ♀ *Microtus oregoni* 126-31-17-11ⁿ-7^c 21.0

667 ♀ " " 124-35-17-11ⁿ-7^c 19.1

668 ♀ *Peromyscus maniculatus* 193-95-22-20ⁿ-17^c 25.9

Aug 16 Same location

669 *Neurotrichus gibbsii* 109-39-16 -- 9.7

670 *Sorex pacificus* 129-58-18ⁿ-10ⁿ-5^c 9.5

671 " " 142-63-18-9ⁿ-5^c 15.0

672 ♀ *Microtus longicaudus* 143-50-21-14ⁿ-9^c 21.9

673 ♀ *Zapus trinotatus* 234-152-34-16ⁿ-11^c 18.6

Murray
1949

5

Catalog

Aug 15 Big Lagoon, Humboldt Co., Calif.

larva 674 *Ambystoma gracile*

" 675 " "

" 676 " "

" 677 " "

Aug 17 Same location

678 ♂ *Clethrionomys californicus* 128-43-20-12ⁿ-8^c 19.7

679 *Thomomys ordinatus*

Aug 18 Same location

680 ♀ ^{2emb} 28mm. *Thomomys bottae* 198-55-28-6ⁿ-5^c 120.0

681 ♀ ^{no} embros " " 201-63-30-6ⁿ-5^c 115.0

682 ♂ ^{Test} 13mm. *Neotoma fuscipes* 429-196-46-32ⁿ-28^c 377.8

683 ♀ ^{no} embros " " 380-175-42-31ⁿ-24^c 291.0

Aug 19 Same location

684 ♀ ^{no} emb *Neurotrichus gibbsii* 108-41-16 9.2

685 ♀ ^{no} emb *Microtus oregoni* 122-37-18-10ⁿ-6^c 20.3

Aug 20 French Camp, 3100 ft., Humboldt Co., Calif.

686 ♀ *Peromyscus maniculatus* 183-94-22-18ⁿ-15^c 24.3

687 ♀ " " 186-96-22-18ⁿ-15^c 24.2

688 ♂ *Neotoma fuscipes* 403-198-40-32ⁿ-27^c 266.3
aug 20 4 mi NINE French Camp

689 *Sceloporus occidentalis*

690 *Eumeces skiltonianus*

Aug 21 French Camp, 3100 ft., Humboldt Co., Calif.

691 ♀ ^{no} embros *Neotoma fuscipes* 330-169-37-27ⁿ-24^c 123.1

692 ♀ ^{no} embros *Peromyscus maniculatus* 202-108-24-17ⁿ-15^c 23.0

693 ♀ ^{no} embros *Sorex townsendii* 103-54-13-8ⁿ-4^c 4.2

694 ? imm. *Hyllocichla guttata* 23.0

695 imm. *Junco oregonus* 13.3

Murray
1949

6

Catalog

Aug 22 Schoolhouse Peak, 2900 ft., Humboldt Co., Calif.

696	?	<i>Sialia mexicana</i>		26.4
697		<i>Myotis evotis</i>	86-39-10-22 ⁿ -19 ^c	5.3
698		<i>Sceloporus occidentalis</i>		
699		<i>Eumeces skiltonianus</i>		

Aug 22 French Camp, 3100 ft., Humboldt Co., Calif.

700 *Gerrhonotus*

Aug 23 Same location

701		<i>Gerrhonotus coeruleus</i>		
702	♂	<i>Peromyscus maniculatus</i>	186-96-23-19 ⁿ -16 ^c	25.6
703	♀	"	188-96-22-18 ⁿ -15 ^c	27.1
704	♂	"	172-88-22-18 ⁿ -16 ^c	22.2

Aug 24 Same location

705		<i>Gerrhonotus</i>		
706	♀	<i>Thomomys</i> gottae	184-65-26-6 ⁿ -6 ^c	58.7
707	♂	"	200-68-28-7 ⁿ -6 ^c	74.6
708	♀	"	178-63-27-6 ⁿ -6 ^c	50.9

Aug 24 2 mi ± N French Camp, 1500 ± ft., Humboldt Co., Calif.

709 *Dicamptodon ensatus*

Parva 710 " "

Aug 25 French Camp, 3100 ft., Humboldt Co., Calif.

711 ♂ ^{test} 11mm *Peromyscus maniculatus* 181-94-21-17ⁿ-14^c 18.1

712 ♂ ^{test} 9mm " " 182-99-23-18ⁿ-16^c 21.2

713 ♀ ^{no} 2mbs " " 183-95-22-19ⁿ-17^c 23.1

Aug 25 1 mi S Coyote Peak, 3200 ft., Humboldt Co., Calif.

714 *Ensatina eschscholtzii*

715 " "

716 " "

717 " "



Murray
1949

7

Catalog

Aug 25 1 mi S Coyote Peak, 3200 ft., Humboldt Co., Calif

718 *Ensatina eschscholtzii*

719 " "

Aug 25 Coyote Peak, 2700 ft., Humboldt Co., Calif

720 *Thamnophis elegans*

Aug 26 French Camp, 3100 ft., Humboldt Co., Calif.

721 ♀ *Neotoma fuscipes* 406-213-38-31"-27" 249.0

Aug 26 2 mi W Martins Ferry, Humboldt Co., Calif.

722 *Thamnophis elegans*

Aug 26 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif

723 *Gerrhonotus coeruleus* ..

724 " "

725 " "

726 *Triturus rivularis*

727 *Triturus rivularis*

728 " "

729 " "

730 " "

731 ♂ *Myotis californicus* 74-33-7-13"-11" 3.2

732 ♀ " " 77-35-7-14"-12" 3.9

~~733 *Rana boylei* die~~

Aug 27 Same location

734 ♂ *Neurotrichus gibbsii* 108-39-16 9.6

735 *Sorex pacificus* 130-67-17-9"-6" 10.7

736 ♀ *Microtus oregoni* 126-35-18-10"-7" 19.1

737 ♀ *Peromyscus maniculatus* 147-70-22-17"-14" 17.7

738 ♂ " " 168-81-22-17"-14" 22.9

739 ♂ " " 178-90-23-18"-15" 23.6

Murray
1949

8

Catalog

Aug 27 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

740 *Aneides ferreus*

741 " "

742 *Triturus rivularis*

743 " "

744 *Hyla regilla*

Aug 28 Same location

745 *Neurotrichus gibbsii* 104-38-16 8.2

746 " " 108-36-16 8.4

747 *Sorex pacificus* 143-67-18-19²-5^c 10.8

748 ♀ *Peromyscus maniculatus* 182-91-22-19²-6^c 26.0

749 *Ensatina eschscholtzii*

Aug 29 Same location

750 *Sorex trowbridgii* 108-54-14-8²-4^c 5.0

Aug 29 4 1/2 mi N, 1 1/2 E Willow Cr., 800 ft., Humboldt Co., Calif.

751 *Sorex trowbridgii* 101-47-13-8²-4^c 4.6

752 " " 101-49-14-8²-4^c 3.6

753 *Sorex pacificus* 132-62-17-8²-5^c 9.8

754 *Clethrionomys californicus* 148-46-19- - - 28.6

Aug 29 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

755 *Microtus oregon* 132-37-18-9²-6^c 22.1

Aug 29 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

756 *Triturus rivularis*

Aug 29 4 mi NNE Willow Creek, 750 ft., Humboldt Co., Calif.

757 *Hyla regilla*

Aug 29 Willow Creek, 500 ft., Humboldt Co., Calif.

758 ♀ *Eptesicus fuscus* 112-45-12-18²-14^c 17.6

759 ♀ " " 123-52-13-18²-14^c 19.9

Murray
1949

Catalog

9

Aug 30 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

760		<i>Neurotrichus gibbsii</i>	108-37-15	8.2
761		"	102-39-16	8.7
762		<i>Sorex townsendii</i>	114-53-14-72-5°	5.0
763		<i>Sorex vagrans</i>	104-50-13-72-4°	3.9
764		<i>Sorex pacificus</i>	137-62-17-9°-5°	9.2
765	♀	<i>Microtus californicus</i>	154-49-22-15°-11°	39.0
766	♂	"	152-49-23-15°-11°	39.0

Aug 30 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

767		<i>Sorex townsendii</i>	108-53-14-97-5°	4.5
-----	--	-------------------------	-----------------	-----

Aug 31 4 mi NNE Willow Creek, 750 ft., Humboldt Co., Calif.

768	♀ ^{3 embs} 8 mm	<i>Microtus californicus</i>	144-47-22-16°-10°	37.0
769	♂	"	150-49-23-15°-11°	38.9
770	♀ ^w embs	<i>Peromyscus maniculatus</i>	188-96-22-18°-16°	20.7

Sept 1 Willow Creek, 500 ft., Humboldt Co., Calif.

771		<i>Sorex townsendii</i>	116-54-16-42-4°	6.1
772	♂	<i>Peromyscus maniculatus</i>	177-90-22-16°-13°	20.8
773	♂	"	170-85-22-17°-15°	20.0
774	♂	"	168-78-23-17°-14°	23.5

Sept 2 ~~3 mi N~~ Willow Creek, 500 ft., Humboldt Co., Calif.

skin only	775	♂	<i>Reithrodontomys megalotis</i>	134-74-18-13°-11°	9.1
	776	♂	<i>Peromyscus truei</i>	204-112-23-14°-16°	26.3
	777	♂	<i>Peromyscus maniculatus</i>	165-177-22-17°-14°	21.8

Sept 3 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

778	♂	<i>Microtus californicus</i>	160-50-24-15°-12°	50.4
779	♂	"	149-46-22-14°-11°	36.6
780	♂	<i>Peromyscus maniculatus</i>	186-98-22-18°-16°	21.4
781	♂	"	164-80-22-18°-16°	20.8

Murray
1949

10

Catalog

Sept 2 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

782 *Diadophis amabilis*

783 *Thamnophis elegans*

Sept 3 4 mi N Willow Creek, 600 ft., Humboldt Co., Calif.

784 *Triturus rivularis*

786 *Sceloporus occidentalis*

~~786 ♀ *Eptesicus fuscus* ^{die} 111-43-12-18ⁿ-13^c 23.3~~

Sept 3 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

787 *Gerrhonotus coeruleus* 1

Sept 4 Same location

788 ? *Neurotrichus gibbsii* 105-39-10 8.9

789 ? *Sorex townsendii* 113-54-14-9ⁿ-5^c 4.9

790 ? " " 108-50-14-9ⁿ-5^c 4.2

791 ♀ ^{no} emb. *Reithrodontomys megalotis* 132-71-18-13ⁿ-11^c 8.2

Sept 3 Erannan Mt., 3700 ft., Humboldt Co., Calif.

792 ♀ ^{no} emb. *Neotoma fuscipes* 396-193-39-31ⁿ-26^c 202.7

793 ♂ *Hylodichla guttata* 22.0

Sept 6 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

794 ♀ *Eutamias amoenus* 193-85-34-19ⁿ-14^c 47.0

795 ♂ *Peromyscus maniculatus* 162-76-21-17ⁿ-14^c 18.3

796 ^{microtus} ~~*Peromyscus*~~ *californicus*? 142-40-22-14ⁿ-12^c 31.9

797 *Dicamptodon ensatus*

798 " "

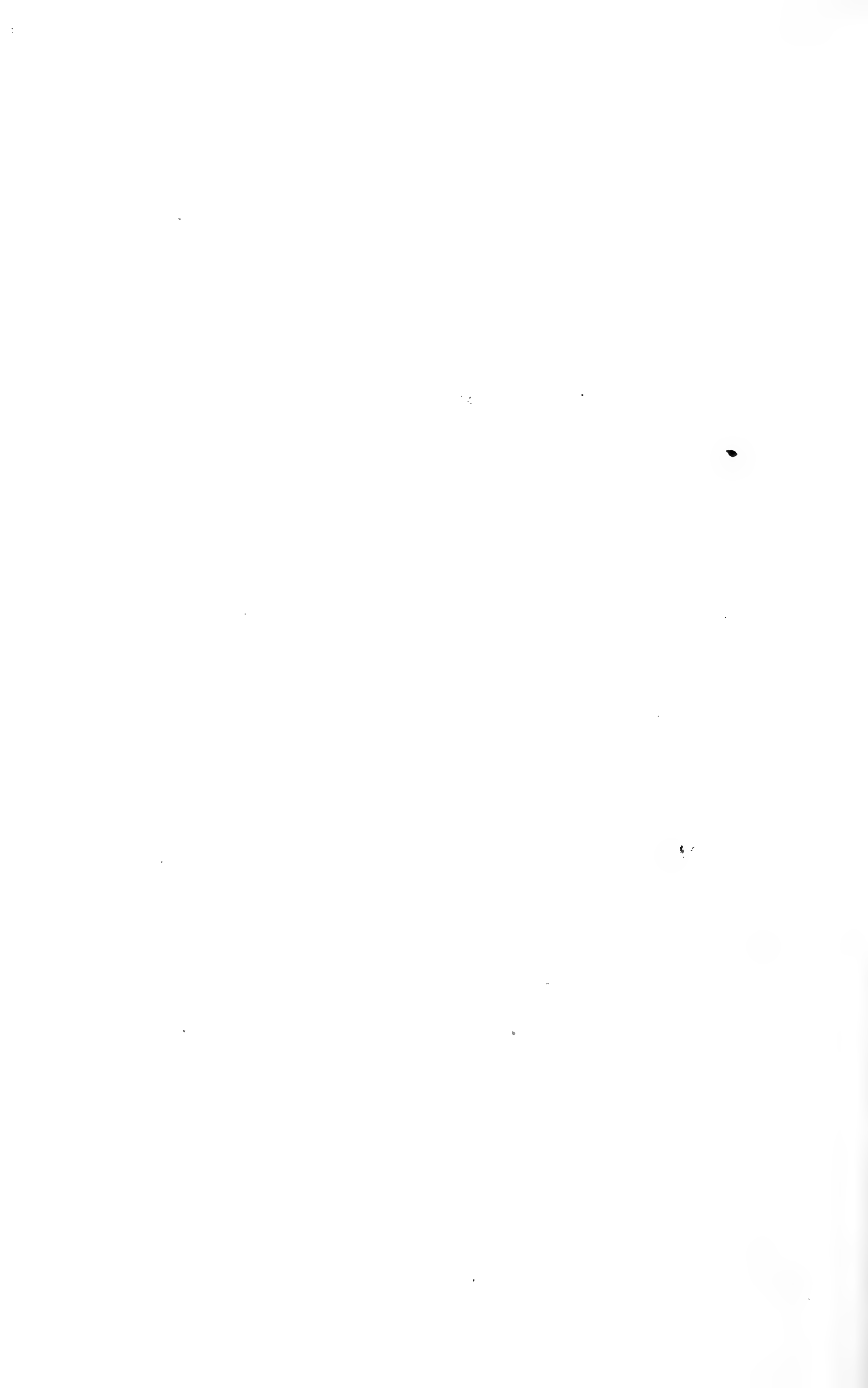
799 " "

800 " "

801 *Hyla regilla*

802 " "

803 *Rana boylei*



Murray
1949

11

Catalog

Sept 6 Red Mt., 5300 ft., 14 mis Hayfork, Trinity Co., Calif.

804 *Cinclus mexicanus*

47.4

Sept 7 Same location

805 *Gerrhonotus coeruleus*

806 ♂ *Eutamias amoenus* 188-84-32-20"-14" 37.3

807 ♂ *Microtus californicus* 164-44-24-15"-12" 44.3

Sept 8 Same location

808 ♀ *Peromyscus maniculatus* 142-66-20-17"-14" 13.8

809 ♀ " " 150-71-21-17"-13" 15.8

810 ♀ " " 155-80-21-17"-15" 18.1

811 ♂ " " 149-68-21-16"-14" 16.4

812 ♂ *Eutamias sonomae* 235-107-37-22"-15" 63.0

813 *Dendrocopos villosus* 64.2

814 ♂ *Eutamias amoenus* 193-86-32-19"-13" 47.1

Sept 9 Same location

815 ♀ ^{no} _{emb.} *Eutamias amoenus* 200-87-34-20"-15" 45.3

816 ♀ " " 193-85-33-19"-14" 40.4

817 ♂ *Peromyscus maniculatus* 150-70-22-18"-15" 15.7

818 ♂ " " 152-67-21-17"-14" 17.6

819 ♂ " " 163-79-22-17"-14" 19.6

820 ♂ " " 155-71-22-18"-16" 18.6

821 ♂ " " 153-68-21-17"-14" 17.5

822 ♀ ^{no} _{emb.} " " 156-75-21-16"-14" 16.5

Sept 8 Same location

823 *Sceloporus occidentalis*

Sept 9 Same location

~~824 *Junco oregonus* 18.4~~

~~825 " " 20.4~~

Murray
1949

12

Catalog

Sept 9 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

826 ♀^{no} emb. *Eutamias amoenus* 202-84-35-20ⁿ-14^c 47.7

827 ~~Sclerorhynchus~~ *gracilis*

828 *Thamnophis elegans*

Sept 10 Same location

829 ♂ *Eutamias amoenus* 196-89-33-19ⁿ-13^c 42.3

830 ♂ " " 182-81-33-18ⁿ-13^c 32.0

831 ♀ *Eutamias sonomae* 245-112-37-22ⁿ-16^c 65.2

832 ♀ *Dipodomys heermanni* 284-174-46-10ⁿ-13^c 60.7

833 ♂ *Neotoma fuscipes* 348-168-37-30ⁿ-23^c 166.6

834 ♀ " " 402-190-40-30ⁿ-24^c 263.6

Oct 22 Lakeport, Lake Co., Calif.

835 *Hyla regilla* Coll. by Marietta Uoge

Sp. acct Mar 15, 1950. Killed Mar 15, 1950

JOURNAL

Murray
1949

Journal

Aug 8 Berkeley to Humboldt Co

Left at 6 AM for a five week trip to Humboldt and Trinity Cos., with Dr. Miller, Dr. Pearson, Gordon Gullion and Howard Cogswell. Have Dodge truck and a new Chevrolet car.

Aug 8 Big Sagoon, Humboldt Co., Calif

Made camp in evening on property of Hammond Lumber Co., near the shore of the lagoon. Maple Creek passes about 75 yards away. The area offers a mixture of vegetation. The stream banks are lined with willows and alders. Much of the area near the stream is solid thicket of salmon berry, thimbleberry, blackberry and ~~vinebark~~. These also grow in scattered patches or strips, often along a fallen log, in extensive ^{moderately grazed} grassy meadows. Numerous fallen logs and dead trees show that this area once was at least somewhat forested. To the north are dense woods of alder and scattered spruce, with a well shaded undergrowth of wet chaparral with ferns.

Set out 45 museum special traps. Line ran along the edge of salmon berry, thimbleberry and blackberry thickets, then

Murray
1949

2

Journal

Aug 8 Big Sagoon, Humboldt Co., Calif.

into area with old piles of boards and a barn. A few were along the edge of some standing water and up on its bank. Dr. Miller found a thamnophilus elegans in the thick grass at camp.

(my cat. 610). Several bats flew at dusk. Just after dark found a Hyla regilla in thick green grass among alders.

Aug 9 Same location

In 45 traps had 2 (1♂, 1♀) Peromyscus maniculatus. (male immature, discarded)

One was under edge of barn, the other in deep in salmonberry chaparral.

The morning was foggy and cool. Picked up a Bufo boreas at about 6:30 AM

out in the open. Pocket gophers are numerous in spots around here. Saw

gophers pulling grass at two holes in camp and set traps for both. Caught one in less than 2 hours. (cat. Pearson)

Turned numerous logs and peeled bark in all habitats. Found a large rotted spruce log with 3 Engastria eschscholtzii, 2 (1 lost) Batrachoseps attenuatus in dense alder-spruce woodland. These were in cracks in the wood under a surface of moss and decayed material. (sp. accts.)

Murray
1949

3

Journal

Aug 9 Big Sagoon, Humboldt Co., Calif.

In the early afternoon turned logs in grassy pastures. By ~~10~~ then it was sunny and moderately warm. Saw several Thomomys active. These and all others so far have been in dry grassy habitats or at the edge of thickets. Under one small log found a nest of young mice, appearing to be Zapus. There are several fields densely grown with thistles. In these American goldfinches are exceedingly abundant. Vaux swifts and purple martins are conspicuous overhead. Song sparrows are also common, though silent. Almost all are in salmonberry thickets.

This afternoon set out 65 traps, trying to get deep into thickets along the stream, again mostly salmonberry blackberry etc. Part were out in the open next to logs, and a few ran through thick spruce and alder.

Shot a Myotis yumanensis? at dusk. Bats fly late here, almost when dark, and after the swifts have quit.

This morning checked several local buildings with Dr. Pearson for bats - none.

Murray
1949

4

Journal

Aug 10 Big Lagoon, Humboldt Co., Calif.

65 traps held 5 Peromyscus maniculatus (1 ♂, 4 immature). Saved only the adult.

Put out 4 gopher traps. Workings are numerous around here, with several open holes in the thick grass, where gophers have been found several times pulling at grass.

In the afternoon went with Dr. Pearson to look in attic of the nearby farmhouse. There were bat droppings, not particularly fresh, but none present. We then checked a dense redwood hillside several hundred yards to the southwest of camp. In a cleared area below the woods and much exposed, was a small pool with a few small Rana aurora and at least one partially metamorphosed Hyla regilla - legs formed and tail starting to disappear. Deep in the lush redwood growth was another pool in which boys said they had seen what answered to Triturus. Found none. One large Rana aurora was sitting on a mossy log at least 4 feet above the ground where a trickle of water ran several feet away. Later I returned to turn and pull apart a number of logs. Found 1 Batrachoseps under a log with very moist soil, where there

Murray
1949

5

Journal

Aug 10 Big Sagoon, Humboldt Co., Calif.

was a thick covering of salmonberry.
By late afternoon there were 1♂, 1♀
thomomys in 4 traps.

I left out 45 traps, mostly those in thickets along the stream and through a bit of shady spruce and alder. Put out 30 more traps in the dense redwood visited earlier. This had once burned over but many large trees remained. There was a thick green undergrowth of salmonberry, solomon, blackberry, thimbleberry and other shrubs, then smaller herbs of Scrophulariaceae, Compositae, Ranunculaceae and in open areas, green grass. The soil was rather moist. The line ran around the pool and a water tank beside it. Had heard a shrew squeaking in the morning.

Today found 2 thamnomys ordinatus, each in grass, 20 and 30 feet from a small marshy patch with standing water.

The weather was cloudy today but thin in parts and part of the time fairly warm and bright. There is a full moon but most nights are foggy — tonight is clear and cold.

Murray
1949

6

Journal

Aug 11 Big Sagoon, Humboldt Co., Calif.

Dawn was clear and it was bright through the morning. Traps in the redwoods had 1 ♂ Sorex pacificus, 1 ♀ Zapus trinotatus. Those around the creek held 3 imm. Peromyscus maniculatus, 1 Sorex pacificus, all discarded. The shrew was in driftwood just above the creek. Late in the morning took off for an abandoned farmhouse which was reported as a good possibility for bats. Drove north along the highway (101) to the end of Big Sagoon. Here a dirt road led up the mountainside and back southeast. Caught a glimpse of what appeared to be a bobcat on the way. Found the farm to be on a quite dry, grassy hillside. There was a house and barn, both, especially the house, good bat habitats, but without even droppings. Numerous barnswallows were flying, and gathering on the roof of the barn to roost. Collected 2, one immature. There were several nests in both barn and house. A few violet-green swallows were also flying. I searched under the many boards lying around but found nothing.

Two gopher traps set all day caught nothing, but one had sprung on a bit of fur.

In the afternoon checked through my

Murray
1949

7

Journal

Aug 11 Big Sagoon, Humboldt Co., Calif.

Traps in the redwoods which were still out.

Found 1 ♂ Sorex pacificus which I am fairly sure was not left from morning.

Left those traps in place for the night and set 35 more in grass and marshy edge of the lagoon, with about 10 of these also up in the redwoods.

Aug 12 Same location

the traps along the lagoon contained 2 ♂ Sorex vagrans in adjoining traps. these were about 2 feet from the water edge at the base of dried and green grass. Those traps in the redwoods had 1 ♂, 1 ♀ Sorex pacificus, 1 ♀ Sorex townsendii, 2 ♀ (1 discarded) Zapus trinotatus. All were similarly placed well into salmonberry and thimbleberry thickets with plenty of ferns. Large redwoods shaded them. One thicket has yielded 2 Zapus and 2 ♀ S. pacificus in 2 days, in 3 or 4 adjoining traps.

Turned and tore apart more red wood logs and stumps in the dense forest. Took out an accumulation of humus 3 feet deep from a hollow stump. Looked through material accumulated in crotches of trees. No salamanders. 1 Sorex vagrans daytime catch along lagoon.

Left 15 traps in place in salmonberry thickets

Murray
1949

Journal

8

Aug 12 Big Lagoon, Humboldt Co., Calif.
of the redwood forest. Reset 15 more in somewhat lower but very dense herbage, mainly *Oxalis*. There are also salmonberry and thimbleberry but not so solid. Several species of fern are very thick. Set 20 traps in the grass at edge of the lagoon. Took 15 to the northeast and placed in a well shaded, moist glade beneath spruce and alders. Undergrowth was thinner than in other equally shaded areas. There were green herbs, nettles, ferns, and lush but scattered grass. Soil was quite moist. Also put 5 in very thick grass up to 2 feet tall, though partly bent over. This was in a strip adjoining redwood forest. Saw some evidence of runways in the thick layer of dry grass at the bottom. Total of 70 traps now out. All are now baited with both walnut and oatmeal, the latter for the first time. Took out 3 Schuyler traps in the alder-spruce forest and set one next to a woodrat nest, the other 2 at random.

Bats were particularly abundant this evening, flying rather high around the spruce trees and over the lagoon. It is clear and chilly.

Murray
1949

9

Journal

Aug 13 Big Sagoon, Humboldt Co., Calif.

In 15 traps of the old set in redwood forest, caught 1♂ Microtus oregoni, 1♀ imm. Peromyscus maniculatus. the 15 reset had nothing. 15 traps in spruce and red alder had 1♀ Sorex pacificus and 1♀ Zapus trinotatus. The first two were in dense salmonberry thickets, the latter two in ferns and nettles. In 20 traps in grass by the lagoon, had 1♀ Microtus longicaudus. this was under the edge of a large sheet of corrugated iron. It was evidently clear all night. Dew is rather heavy.

Spent the afternoon in moist spruce and alder forest to the southeast, tearing apart mossy logs, digging into rotted stumps, etc. I have many times over approximated the conditions under which found the Ensatina, but to no avail.

Saw another Rana aurora in an area of dense alder, ^{few spruce} and tall (8 to 10 ft) salmonberry and nettle, with dry sandy soil and dead leaves on the ground. Apparently no water in the near vicinity, as I had circled. Have checked Maple Creek frequently for Dicamptodon larvae. Found woodrat nest in spruce stump, very rotted. there was a small pile of twigs on top, and

Murray
1949

10

Journal

Aug 13 Big Lagoon, Humboldt Co., Calif.

apparently a set of passages inside. Found fresh droppings.

In this area put 25 museum specials. Ground was moist to dry - much shaded by spruce and alder. Salmonberry was thinner and tall, ^{also red elderberry} so that cover close to the ground was confined mainly to ferns, nettles and green herbaceous growth. There were numerous dead leaves and some green grass. There were many fallen logs and rotted stumps, and the traps were mainly placed as much under these as possible. The growth was thin enough so that a trap could not be readily concealed in it.

30 traps in the redwoods were left in place, as were 15 traps already in spruce and alder. In the most exposed of these, found a daytime catch of 1 Sorex pacificus. Trap was at the edge of the forest, in thick nettle and salmonberry.

Also set 20 Sherman live traps next to camp, running along rows of salmonberry, blackberry, thimbleberry thickets, exposed except at the end of the line. Which entered spruce, alder woods. An early small bat flew tonight,

Murray
1949

11

Journal

Aug 13 Big Lagoon, Humboldt Co., Calif.

at least 10 minutes before any thus far. Might be Myotis californicus. The others, which have all been Myotis yumanensis (or evotis), all start when darkness is well underway. Tonight noted that they first appear all together at the tops of several spruce trees next to the lagoon. For several minutes remain high, then drop lower and spread out over the lagoon (that part which extends inland next to camp and is filled with logs) to feed.

Aug 14 Same location

In 20 live traps had 1 Sorex ^{trowbridgei} pacificus, just into the denser woods. 15 traps held over in spruce and alder had 1 Sorex pacificus, 1 ♂ Microtus oregoni. Both were on the edge of the dense woods. 25 traps newly set in spruce, alders, had 1 ad, 1 imm. Peromyscus maniculatus, 1 ♂, 1 ♀ Zapus trinotatus, 1 Microtus oregoni (Microtus + Peromyscus discarded). Peromysc. both in hollow logs. the Microtus was in very moist area with ferns and leaf mold. 30 traps in Redwoods had 1 Sorex pacificus, 1 Sorex trowbridgei, 1 Neurotrichus gibbsii, latter in dense oxalis.

Murray
1949

12

Journal

Aug 14 Big Sagoon, Humboldt Co., Calif.

Dr. Pearson and Cogswell yesterday brought in a half sized ~~Rhyacotriton~~ Ascaphus which they had found in a stream in redwoods. This morning they had several Ascaphus tadpoles and some Rhyacotriton larvae. This afternoon Dr. Miller, Gullion and I went up for a look. The stream runs up about a 30° , south facing hillside, fairly densely grown with redwoods. It is very rocky, with boulders up to 3 feet for the most part. There is a succession of shelf like pools, with water flowing over rocks and dropping 2 or 3 feet in between. The flow is not particularly swift; not enough to cause splashing over rocks. There are fallen logs and overhanging rocks to give shaded spots. Found a number of Ascaphus larvae, always attached to rocks. Their position seemed random, and not particularly oriented downstream, though the swiftness of the water probably does not warrant that here. Some had tails being bent at right angles by the current. Most were on exposed rock surfaces, though a few were on the bottom beneath rocks. One would

Murray
1949

13

Journal

Aug 14 Big Sagoon, Humboldt Co., Calif.

Sometimes swim rapidly several inches to a foot, then attach the moment it touched a new surface. The tails all seemed to have white tips. They appeared to be in quieter water primarily. We also found

Rhyacotriton larvae numerous but somewhat less so. These were in pools, generally resting on the bottom or in spaces under rocks. A number were found by turning rocks. They moved rapidly and elusively.

Dr. Miller found one under a rock in shallow water which outwardly had metamorphosed. ^{prob. adult} Found an adult

Ascaphus ♀ half under a rock in a pool 5 in. deep. This was just below falling water. The frog made no effort to escape—was very sluggish. Cullion found a partly grown Dicamptodon under a rock next to the stream—very moist soil, almost saturated with water.

The adult Ascaphus was bronze colored with a touch of pink on the limbs—measured 28 mm. The tadpoles varied from black to brown, some marked with light flecks.

Bats were few tonight. It was cold, somewhat windy and cloudy.

Set 15 traps deep in the spruce—alder

Murray
1949

14

Journal

Aug 14 Big Sagoon, Humboldt Co., Calif.

Woods next to camp. there were salmonberry thickets, with ferns, green herbs, and green grass. Set 15 traps in spruce and alder woodland for the 3rd night, 25 in another part for the second night. 15 were still in redwoods for the 3rd night.

Aug 15 Same location

In 15 traps newly set in spruce-alder, had 2 imm Peromyscus maniculatus (disc), 1 Sorex pacificus (disc), 1 ♀ Sorex trowbridgii. 25 traps remaining in spruce-alder had 1 ♀ Peromyscus maniculatus, 1 ♀ Microtus oregoni, 1 Sorex pacificus (disc), 1 winter wren. the wren was in a deep dark space beneath a log, and the Microtus in a clump of ferns and herbs - quite moist. the other 15 traps in spruce and alder had 1 ♀ Microtus oregoni in the same trap as the one of yesterday. 15 traps in redwood held 1 ♂ Peromyscus maniculatus (disc)

Went with Gullion to see pool from which he caught several Ambystoma larvae. Took several more (sp. acct.)

Returned to check the habitat of Neurotrichus gilbsii, and found a number of runways in the dense mat of redwood leaves on which

Murray
1949

15

Journal

Aug 15 Big Sagoon, Humboldt Co., Calif.
it was caught.

Went with Cogswell back to the ranch where looked for bats on Aug 11. This time set out 40 traps. Put several under the barn and in the pile of boards next to it. The rest ran down a little dry creek draw and up a slope, all with very thick, 4 ft. high brush. This was mainly Rhododendron occidentale, blackberry, and Salal, with Vaccinium ovatum, some Baccharis and wild Rosa. The aspect was quite dry, though the plant forms are moist ones. They looked parched and reddened from dryness. There was a little bunch grass mixed in. It was clear up on the hill while fog was lying over the lagoon and the camp area.

Aug 16 Same location

In traps had 2 Microtus californicus (1 ♀, 1 disc.). Both were under the barn. Well grazed grass was all around. 2 Sorex pacificus (1 breeding ♂), 1 ♀ Zapus were in brush. 3 ♀, 2 ♂ (4 imm) Peromyscus maniculatus (all disc) were under the barn or in brush. Had 100% catch around the barn and nearby logs in 6 traps. Several traps were sprung and bait

22

Murray
1949

16

Journal

Aug 16 Big Sagoon, Humboldt Co., Calif.

Stolen. Some had very small, slender droppings on them.

Yesterday set trap on woodrat nest in hollow log - caught nothing. Had also left out line of 15 traps in the spruce and alder next to camp, and the same 15 in the redwoods for the 4th night. In the redwoods caught another Neurotrichus gibbsii, at the base of a thick fern clump with Oxalis. There were dead leaves on the ground with apparently ill defined runways.

Set out 4 gopher traps near camp in fresh workings

Went down to area where Dr. Miller camped in 1942 and caught Clethrionomys. Set 50 traps in what was primarily redwood forest, but had in that part a number of large fir trees, apparently both douglas and lowland, and also spruce. Tried to keep in the fir as much as possible. There was everywhere a dense layer of fallen needles with mixed in twigs and branches, then a moist decomposed stratum beneath. Seemed to be many runways, perhaps Neurotrichus. Undergrowth was salal, blackberry, thimbleberry, Corylus

Murray
1949

17

Journal

Aug 14 Big Sagoon, Humboldt Co., Calif.

4 to 5 feet tall, but generally open at the base except for a tangle of branches. In some spots there were a number of ferns. For a number of traps, dug out the leaf litter.

Aug 17 Same location

In the 50 traps had 1 ♂ Clethrionomys californicus, 2 Sorex pacificus^{cheer}, 4 Peromyscus maniculatus (disc). The Clethrionomys was under fir trees, probably Douglas, but perhaps at least partly lowland. Trap on fairly exposed floor of needles, with a few ferns, well shaded.

Maintained 4, then 5 gopher traps through the day without success. Set 15 traps in the redwoods, next to where I took the Neurotrichus. This time made a special effort for them, digging down in leaf litter to runways and setting in them, then covering over. Found runways numerous almost everywhere under the trees where leaf litter was an inch deep or more - ran along the surface of the ground. Much of the area was grown with Oxalis, the roots of which made a mat on the surface. Undergrowth was salmonberry & thimbleberry, though

Murray
1949

18

Journal

Aug 17 Big Sagoon, Humboldt Co, Calif.

a number of traps were at exposed base of the trees. Saw a garter snake sunning on a log in a sunny patch well into the redwoods - the first in forest seen here.

Could not get species. Later, in alder and spruce next to camp saw one, then collected another, a thamnophis ordinatus.

In afternoon went with Dr. Pearson to trap woodrats in redwood patches near the road to the ranch visited before. Spot was where cutoff road to the highway meets it up on the hillside. Mostly brush but a few redwoods. In one part there were 3 nests, 2 on ground, one in tree; completely built of redwood branches and dead leaves. Another was ^{Schuyler} down lower and in a tree. Set 5 traps for 4 nests, then another for a nest in the brush nearby. Finished the venture by getting the truck stranded over the bank. Will get it out tomorrow.

Aug 18 Same location

In the ^{Schuyler} at woodrat nests, caught 1♂, 1♀ Neotoma fuscipes, 1 Spilogale ^{redwood} gracile. 1 rat was in a tree nest 10 feet up, on which the trap was set. the other was the one in brush. there was a

Murray
1949

19.

Journal

Aug 18 Big Sagoon, 400 ft, Humboldt Co., Calif.

Some gnawing around the bark of the red woods, usually in bands. Saw none which was deep enough to reach the cambium, or even near to it.

Caught no Neurotrichus, or anything else in 15 traps in the red woods near camp.

Had 2 ♀ Thomomys bottae out of 5 traps this morning.

The weather for several days has been cold at night and irregularly clear and foggy. Fog is inclined to blow up the valley at any time. The days, especially today, have warmed up and become sunny.

On the road along bushy hillside ~~on~~ near where the truck was stuck, saw a doe and fawn. Also many tracks all along the road.

In the afternoon set traps along the old abandoned highway west of the inland part of the lagoon. The vegetation was a mixture of spruce, hemlock and alder, with salmonberry, thimbleberry and blackberry the undergrowth. There were a great many ferns. The road itself was open, with a bank on one side covered with ferns, and grassy patches. Several small streams ran across, and at these points there

Handwritten scribble consisting of several horizontal lines.

Murray
1949

20.

Journal

Aug 18 Big Sagoon, Humboldt Co., Calif.

was much Equisetum. The moist bank beside the road had numerous small burrows in it. Put out 45 traps.

Aug 19 Same location

Caught 1 ♀ Neurotrichus gibbsii; 2 ♀, 1 released, Zapus trinotatus; 1 Sorex townsendi, 1 Sorex pacificus; 3 ♂, 4 ♀ Peromyscus maniculatus, 1 ♀ Microtus oregoni. All but the Neurotrichus and Microtus were discarded. Found the Neurotrichus behind a log in very moist ground, shaded by ferns. This time no deep leaf litter. Zapus were all in grass where a stream crossed the road. Found only Peromyscus at base of the bank. Perhaps they live in the holes.

Packed up in the morning and left, heading up the red wood highway to Orick.

Reptiles seen:

Thamnophis elegans - common in drier parts.

Usually in thistles of the pasture or blackberry thickets. Less often in salmonberry and thimbleberry.

Thamnophis ordinatus - Found several in grass near small marshy spots. Dr. Pearson got 2 next to a marsh along the lagoon. I was in spruce and alder forest, damp.

Both species usually were out only when the sun was shining. Only other reptile

Murray
1949

21

Journal

Aug 19 Big Sagoon, Humboldt Co., Calif
was a Gerrhonotus coeruleus taken by Dr. Miller.

Amphibians

Ensatina eschscholtzii - Three in a damp
rotted spruce log. 2 had eggs with them.

Batrachoseps attenuatus - Found 2 with
the Ensatina, in narrow holes in the log. Also
1 under a very moist redwood log in redwood forest.

Ambystoma gracile - there were a number
of larvae in a pool in spruce-alder forest.
See also Gullion's sp. acct.

Rhyacotriton olympicus - Numerous larvae
and 1 adult were in pools of a rocky stream
through redwood forest.

Dicamptodon ensatus - Gullion found 1 adult
under a rock in wet bank of same stream.

Aescaphus truei - Many larvae, 1 adult,
and 1 medium sized frog came from the
redwood stream, also.

Bufo boreas - common anywhere, sometimes
diurnally on foggy days.

Rana aurora - very common around pools,
sluggish streams, or occasionally faster water.
Frequently found on dry land some distance from
water.

Hyla regilla - Moderately numerous, in
moist or marshy places. Often in grass in
spruce and alder forest.

Journal

Aug 19 French Camp, 3100 ft., Humboldt Co., Calif.

Headed up the mountain out of Orick on a dirt road to this locality, arriving in the evening. We are primarily in Douglas fir forest, much of it with incense cedar mixed in. There are burns to varying degrees. Some is burned out with grass and bracken fern, or thick growth of shrubby tan oak and chinquapin. Most of the ground under standing timber is fairly open, with varying amounts of Physocarpus capitatus, Holodiscus discolor, Tan oak, Rhododendron occidentale, and a number of other shrubs. More open spaces have Arctostaphylos glandulosa and another low manzanita. In some parts tree size chinquapin and madrone are mixed in with the fir. Down the road to the NE is a stand of thick dry brush, mostly chinquapin. There are areas which are grassy with or without bracken fern. A very small, short stream runs nearby, but disappears. There are occasional rocky outcrops or loose rocks of serpentine, slate, and others. A few plants link the area with the coastal belt. Salal is scattered about, and is thick in some spots. There is much bracken fern
MUS. SPEC.

Set out 35 traps, starting where the stream goes under but is moist. Ran through fir and

Murray
1949

23

Journal

Aug 19 French Camp, 3100 ft., Humboldt Co., Calif.
cedar woods, not thick, with scattered brush
of Rhododendron and tan oak. There were
several grassy patches. Hit small pool of water.

Aug 20. Same location

Caught 7 Peromyscus maniculatus (saved 2 ♀),
1 ♂ Neotoma fuscipes, an adult. Saw no
Woodrat houses in the area, but there were
other places for nests. Many traps were
snapped, and some were upset and pulled
away. Probably was work of woodrat.

Took a long look down the road to
the NE. The unforested area on the map
as Wiregrass Prairie was a solid growth
of bushy chinquapin 4 or 5 feet tall,
and very dry. At the base grew bracken fern,
with a layer of dried leaves from both.

Here found a road running down the
hillside over a mile marked "Fullwood".

Followed to an abandoned house and
garage with a few fruit trees. Checked
for bats and found none. There were many
woodrat and mouse droppings in house and
garage. Had a wooden tank about 8 ft square
and 3 ½ ft high, with a trickle of water
running in and about 2 in. in the bottom.

Several Sceloporus occidentalis were on
boards etc. Caught 1. On my way

Murray
1949-1

24

Journal

Aug. 20 French Camp, 3100 ft., Humboldt Co., Calif.

back along the road found 1 small skink in chinquapin with bracken fern. Sceloporus were fairly common on the bank along the road.

Later looked around the burned area to the west. Turned rocks, logs, bark in what seemed fair skink habitat. Saw more scelops, mostly on fallen logs.

Left traps in place, and set out 15 more in open ground under large firs. Only a scattering of tan oak and bracken.

Find deer droppings, many fresh, frequently. Also saw tracks on the road. there were raccoon tracks on the road and what looked like fox.

Aug 21 Same location

In the evening we returned and waited at the water tank for bats. Had several sporadic visits from a large bat or bats, and once from a small one. Gullion found 2 Bufo

Aug 21 Same location

In traps caught 1 ♀ Sorex townsendii, 1 ♀ imm. Neotoma fuscipes, 3 Peromyscus maniculatus (2 dis.) in 35 traps; 1 Peromyscus (dis) in 15. Again several traps were snapped and overturned.

Chipmunks are abundant here, apparently all Eutamias townsendii. Have seen many

3

4

5

6

1

Murray
1949

25

Journal

Aug 21 French Camp, 3100 ft, Humboldt Co., Calif.

gopher workings, both in scattered forest and grassy places. Also mole runs. Have seen 1 brush rabbit

Took 40 traps across from camp on a forested slope. Most ran on open ground under firs with needles, circled a rock outcropping. Some were in clumps of unidentified bunch grass, then into shrubby growth of chinquapin with many dried leaves on the ground. Rearranged my other 15 traps so that most passed through a thicker growth of the same bunch grass, with bracken fern mixed in - still under firs.

Aug 22 Same location

In all traps caught only 3 Peromyscus maniculatus (all disc.)

This morning went down to the grassy rolling hillside of Schoolhouse Peak - south facing slope. Very dry, with dried grass 4 to 6 in. high, partially grazed by sheep. There were several moister gullies with patches of Juncus. One had 2 water tanks near the road, with a trickle of running water for a short distance, then moisture a little farther. Set 20 traps along this, mostly in Juncus. There were several rock outcroppings, and loose rock scattered around. Saw a few Sceloporus on

Murray
1949

26

Journal

Aug 22 French Camp, 3100 ft., Humboldt Co., Calif.

these and collected 1. Caught a Eumeces on one large outcropping and saw another. Citellus were quite numerous. Pulled off a piece of exfoliating rock from an outcrop and found a Myotis evotis in the narrow crack beneath it. Somewhere on almost every rock outcrop there was a pile of ^{mostly} disintegrated scat, a few pieces still holding shape which was almost surely bear. Most were composed entirely of grasshopper parts, a few with some berry seeds also. These were 100 to 200 yds from forested areas. Grasshoppers were exceedingly thick in the grassy field. Shot a bluebird, one of several on fence posts.

Shifted most of my traps on the hill across from camp, running through a patch of Ceanothus cuneatus on a very dry and otherwise bare slope. Most of them were in fir forest on top of the ridge and just slightly onto the north facing slope. The ground was almost bare here except for a good layer of needles, and scattered moss covered rocks.

On the way down picked up a Gerrhonotus in an open bracken fern and grass covered area. By then the sun had gone behind the ridge.

Left the other 15 traps in place.

Murray
1949

27

Journal

Aug 22 French Camp, 3100 ft., Humboldt Co., Calif.

Went with Dr. Pearson to watch for bats at the watering tanks by Schoolhouse Peak where I set traps. A thick fog rolled in, also enveloping our camp. Saw no bats, though Dr. Pearson saw 1. We slept on the spot.

Aug 23 Same location

the Schoolhouse Peak traps had 3 Peromyscus, all discarded.

Talked with Mr. Lyons, owner of the sheep ranch where we were trapping, and also much of the forested land in the area.

He said that coyotes ^{poisoned} once were common but now are scarce. Bait is put out for them.

Said that gray foxes and raccoons were fairly common; skunks scarce now but used to be abundant; flying squirrels present but not numerous; plenty of bobcats. Indicated that he shot bears, which apparently are at least quite conspicuous, because of harm to sheep. Said there were gopher snakes.

Returning to camp, found fog still thick and down to the ground. Lifted by 9:30. In traps, had 2 Peromyscus in those running through Ceanothus cuneatus. In about 12 traps in the fir on top of the ridge, took 7 Peromyscus. The ground here

Murray
1949

28

Journal

Aug 23 French Camp, 3100 ft., Humboldt Co., Calif.

was sopping wet from the fog, as were the trees above. This was not true of the slope below, at least the south facing one. The mouse abundance seemed to correspond with the moisture. The 15 other traps had 1 Peromyscus

Picked up a Gerrhonotus coeruleus in the open, sparsely grassy slope across from camp. at 10:30 AM

This morning Dr. Pearson found an Ensatina in moist fir forest by Schoolhouse Peak.

Left 10 traps in Ceanothus cuneatus, and 12 in fir on the ridge, then took down the steep North facing slope of the ridge north of camp. For several hundred yards this is mainly a burn, with dead stumps and logs, bare or dry grass and some brush, mostly tan oaks. A little to the east I could see dense shrub chinquapin growth. Some distance down found a stream which ran at first in the burn, then in moist fir forest. There were a few scattered redwoods, rather small. The flow was small but steady, and sharply dropping in a steep canyon. Along the banks were several kinds of green tall grass, sedge, and a little Equisetum. There were numerous Cornus nuttallii, sword ferns, maiden hair ferns. In some spots

Murray
1949

29

Journal

Aug 23 French Camp, 3100ft., Humboldt Co., Calif.
^{was} there dense, short growth of salal. Tan oaks were scattered along the banks. Throughout there were many fallen logs and branches, and much rock, though mostly solid bed rock. Put all traps along this stream.

Saw 2 woodpeckers diving on and attacking a steller jay, continuously giving their song. Finally succeeded in chasing it away.

Aug 24 Same location

Caught a total of 6 Peromyscus in traps, 4 in the new ones. Threw them away and continued down the stream. Found it was joined by another branch and became a strong flow. There were many rocks, some large, over which the water flowed. The Douglas firs were very tall and fairly thick. There were a few small redwoods and incense cedars. Tan oaks, maple, ~~an~~ Cornus nuttallii, Corylus were along the banks, shading. Sword ferns and green grass were along the water edge. Many fir logs had fallen across the stream. The slope was exceedingly steep, with sides of the canyon moderately so. Found several Dicamptodon larvae in pools. Found an adult under a slab of bark next to the stream (sp. acc.). Saw 1 Aescaphus truei tadpole for sure,

Murray
1949

30

Journal

Aug 24 French Camp, 3100 ft., Humboldt Co., Calif.

But lost it. On the way back up found a Gerrhonotus in the burned area in grass and dead leaves. — 11:30 AM

On 4 gopher traps, set last night on the open grassy slope across from camp, caught 2 ♀, 1 ♂. These are smaller and redder backed than usual.

Saw 2 fresh mole mounds on the north facing hillside in burned area. There are numerous mounds and runs in both forested and open areas around here, but appear to be obsolete.

Set ft. traps out and added 15 in fir forest just down the hill from camp — open floor of dead needles. Few incense cedars mixed in.

At dusk saw 3 night hawks fly, the first in this area observed.

Aug 25 French Camp, 3100 ft., Humboldt Co., Calif.

Traps below camp had 3 Peromyscus; those in leamothus had 1; those on top of the ridge had 2; those down the stream had 4. Pretty poor. Put up 3.

Took off with Cogswell and Bullion to look around the Coyote Peak area. Went along the road which passes across it. for about a mile, then found we were blocked by a locked gate. This was in a

Murray
1949

31

Journal

Aug 25 French Camp, 3100 ft., Humboldt Co., Calif.

narrow section where timber crossed the ridge. Both to the north and south were grassy bald sections along the crest. This road continues on along the ridge for quite a distance, apparently in good enough condition. Checked the SE facing slope just below the road. This was tall fir, fairly dense, with scattered tan oak underneath - moist in that part. Under the bark of 1 40 ft. fir log found 10 Ensatina and 3 Aneides ferreus among us. There were scattered others in other logs. (Sp. acc.) Went over the ridge and down the NW slope, where there were many large maples mixed in with the fir. Also saw a few madrones and chinquapin. It was somewhat drier. Went down the hill looking for a stream, but only found dry beds for several hundred yards. Found 2 more Ensatina, each under bark of fir logs. Bird activity then - 12 to 2 - was just about nil. Came out on the ridge in a grassy stretch where there were a fantastic number of grasshoppers. Found a watering trough by the road, fed from a spring.

We returned to the main road and entered another (on section map) ending

Journal

Aug 25 French Camp, 3100 ft., Humboldt Co., Calif.

Reptiles - seen:

Sceloporus occidentalis - moderately numerous in some of the drier more exposed areas, as burns and banks of roads.

Eumeces skiltonianus - Have seen 3 and caught 2. A few have been encountered by the others. Rocky outcrops, dry leaves under Garry oak or madrone - dry.

Gerrhonotus coeruleus - Several have turned up in such places as grass and bracken fern, grassy burns, leaf litter under brush. May also have a multicaudatus or 2.

Thamnophis elegans - took 1 under firs, and Dr. Miller found 1 in dry brush.

Pituophis catenifer was reported in the area by one of the ranchers.

Amphibians:

Ensatina eschscholtzii - Many found in one area of fir forest under ~~dense~~ bark of logs. Dr. Pearson also took a few in another fir slope.

Aneides ferreus - Few turned up with the Ensatina under bark in fir forest.

Dicamptodon ensatus - took 1 adult ^{under bark} and several larvae in steep rocky stream.

Gullion also found larvae in another stream.

Murray
1949

33

Journal

Aug 25 French Camp, 3100ft., Humboldt Co., Calif

Ascapbus truei - saw 1 larva in stream with
Dicamptodon.

Rhyacotriton olympicus - Dr. Pearson found
1 in moist fir forest. Gullion got 2 partly
metamorphosed larvae in a stream.

Bufo boreas - Gullion found 2 at an abandoned
house.

Murray
1949

34

Journal

Aug 25 French Camp, 3100 ft., Humboldt Co., Calif.
below and just west of Coyote Peak. Near
its end found a spring with a dammed
up pool of water about 30x15 feet - this
in fir forest. Looking beyond found a
clearing where the road ended with a
slope of tall, thick, ungrazed grass above
it. In this, I thought I saw runways, not
well formed enough for typical Microtus.
Had seeds in them and might be Zapus.
Found a small stream running down
which I didn't follow. 50 yards down
hill from the spring there was a shack,
evidently being occupied by a sheep herder.
Found a Thomomys elegans in shaded
spot with herbaceous green growth on ground.
Left out just 15 traps in the firs behind
camp. Also still the 3 Schuylers at woodrat houses.

Aug 26 Same location

Caught 1 ♀ Neotoma fuscipes in a
schuyler at a house. 2 Peromyscus maniculatus
were in the mouse traps.

Dr. Pearson trapped in the grass at Coyote
Peak mentioned above and did get Zapus pacificus

The weather has been warmer the last 2
days, not chilling off so badly at night.
Continued bright sunny days.

Murray
1949

35

Journal

Aug. 26 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Packed up and left French Camp, driving down the mountain to Martin's Ferry. About 2 mi. preceding, found a young Thamnophis elegans along the road. Noticed as we descended steeply, that there were increasing numbers of madrones, then quite a few oaks scattered through. Then traveled through Hoopa Valley to Willow Creek. Heard there were bats in some buildings there, and expect to check later. About 2 mi above Hoopa, saw a blue tail small skunk run from the road.

Made our camp on Coon Creek, crossing a suspension bridge over the Trinity River and following the road to where it intersects the creek. Our camp is beside the road, much shaded by a tall canopy of maples. The stream is a pretty large one, and rapid flowing. There are numerous rocks in it. Saw that there were many Rana boylei along the banks, extremely active. There are also Dicamptodon larvae. Walking along the road saw skunk, deer, snake, and lizard tracks. Found a Gerrhonotus multicarinatus in the road. Saw a Sciurus griseus on a tree.

Set 45 traps, going downstream and putting the traps either next to the water or in vegetation at the base of the banks.

Murray
1949

36

Journal

Aug 26 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

there are many logs around, many of them rotted Douglas fir. Apparently the firs have been burned out of the canyon bottom. Must describe vegetation in the morning. Turned one log and found 4 Triturus rivularis; am not sure whether they were underneath or in cracks, as the log split. the underportion was very moist, and above drier - all well rotted. Found 2 Gerrhonotus coeruleus under it also. Not far away found a Gerrhonotus coeruleus out and active in grassy patch. All these were within 4 feet of the stream.

At early dusk found bats were flying up and down the stream course. Took a net and netted 2 Myotis californicus as they fed in one clear space over the water. Dr. Pearson shot a Myotis volans. He also found a Triturus rivularis active at edge of stream (on land) when it was almost dark.

Found that mole crickets have the nerve to come and steal bait from the traps at night.

The day here has been clear and quite warm.

Journal

Aug 27 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Traps had 1 ♂ Neurotrichus gibbsii,
1 ♀ Microtus oregoni, 1 Sorex pacificus,
10 Peromyscus maniculatus (saved 3)

The streambed is shaded by large maples growing in a thick canopy overhead. There is a great deal of dry leaf litter with bracken ferns in varying density. There are numerous rocks, most moss covered, as are the many rotted fir and maple logs. Found some tanoak, Ribes bracteosum (stink currant) Cornus nuttallii, and young maples, though shrub growth is very thin and scattered. In some spots there is deep moist decayed material, or it may be dry. There are a few small grassy patches, mostly mixed with bracken fern. There is sword fern in moister parts. Every so far there is a wet seep flowing down the hillside into the stream. The slopes above the banks are largely dense but dry bracken fern, with maples overhead.

Went upstream for about $\frac{3}{4}$ mile today, and found it much the same as below. There are crayfish living in the water and small fish. Under bark of Douglas fir logs found 2 Aneides ferreus and 2 Triturus rivularis

Murray
1949

38.

Journal

Aug 27 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Flushed up 3 ruffed grouse which were down by the water, perhaps drinking.

Bird life has not been at all noticeable in the vicinity of the stream.

Left my traps in place along the stream and added 15, making a total of 60. This time baited with oatmeal. Again saw ruffed grouse, this time downstream. There were more than 5, some at the water.

The bats flying at dusk seem to work their way upstream from below camp, feeding first in shaded, darker spaces over the water and then more in the open. This time could not net any.

Today there were thin clouds by late morning which did not prevent it from being quite warm.

Aug 28 Same location

In traps had 2 Neurotrichus gibbsii,
♂ Sorex pacificus, 4 Peromyscus maniculatus
(Kept 1♀)

In the afternoon we checked the attic of the Willow Creek Hotel building - a small wooden one. There are supposed to be many bats which emerge from a crack, but must live under the corrugated tin roof.

On the way back, I looked along the

Murray
1949

39

Journal

Aug 28 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.
Trinity River. Found a long pool in the sandy bottom, cut off from the river but fed by a small stream drainage. the water was from 2 inches to about a foot in depth. there were a number of Rana boylei tadpoles from the hind leg stage up to those with only a small amount of tail left. All were extremely fast and would head for a rock when disturbed and hide under the edge. there were many rocks in the water. there was fine sediment on the bottom in which they seemed to be almost submerged.

Nearby there was a moist hollow in the sand, where apparently there was water standing not long ago. Found a dozen or so recently metamorphosed Bufo boreas, some hopping around; others were crowded into a shallow hole in the side of the hollow. — about 1 inch long. Saw several mourning doves in the vegetation on the river bank. Walked up the road in somewhat brushy ground, with madrones, tanoaks and manzanita. there were a good many Sceloporus on logs.

On the flat land not far from the river and near the town there is a small patch

Journal

Aug 28 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.
of digger pine with a dense growth of Cercostaphylos manzanita under it. -
very dry there is yellow pine scattered
thinly around the lower slopes and
some on the flat ranch land. By and
large, however, the coniferous forest is
Douglas fir. It is not very successful
at the lower levels, being at least mixed
with, if not superseded by, tan oak,
chinquapin, maple and madrone. Looking
over the forested hillsides, it appears that
this combination holds to some extent up there.
4 1/2 mi N, 1 1/2 mi E Willow Cr.

Took 45 traps up to Horse Sinto Creek.
this is a strong broad flow, very rocky
with well washed rocks up to 2 ft. - in a
broad stream bed. There are many maples
and some red alders along its banks, with
a number of black oaks mixed with fir
on the flat alongside. The north facing slope
is a very steep one, with maples part way
up and then mostly fir. The slope comes
down to the stream side as a rocky, fairly
moist, moss covered bank. There are bracken,
sword and maiden hair ferns, with a few
Cornus nuttallii. Ran about 15 traps along
this bank, mostly under ferns. In one
place the stream divides, with a very slight

Murray
1949

41

Journal

Aug 28 3 mi. N Willow Creek, 700 ft., Humboldt Co., Calif.
flow splitting out to form an island about
100 x 30 feet with tall maples and alders, a
few dogwoods (Cornus) and a thick growth
of tall, dry grass. Set about 15 more traps
in the grass. There are also thin patches
of raspberry. The rest took up the Horse
Sinto trail about 300 yards. Here found
a somewhat marshy patch where a slight stream
flow crossed the path. There was a very dense
and green growth of ^{Corylus californica} ~~Alnus rubra~~, raspberry,
and green grass, with a little Equisetum.
Put a few traps here and then a little way
down the trail found another patch of
thick green grass, raspberry, Corylus and
lush green herbs. Placed the rest here.

At dusk, Dr. Pearson and I went down and
waited at the Willow Creek Hotel, where bats
were reputed to emerge from a crack in
the roof. They wouldn't come out for us,
however. There were an ample number of
large bats flying in the area, with a few
small ones. Large looked like Eptesicus.

Aug 29 Same location

The traps around Horse Sinto Creek had
1 Sorex Trowbridgei (grassy island), 2 ♀, 1 ♂,
1 released Peromyscus maniculatus

those up the trail had 1 ♂ Clethrionomys

Murray
1949

42

Journal

Aug 29 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

1 Sorex trowbridgii, 3 ♂, 2 ♀ Peromyscus maniculatus.

Traps of old line along Coon Creek had
1 Microtus oregoni, 1 Sorex pacificus,
1 Sorex trowbridgii, 3 Peromyscus.
All Peromyscus were discarded.

At edge of Horse Sinto Creek found a
Triturus rivularis out on rock at 8 AM.

In the afternoon went out with Dr.
Pearson to hunt bats. First went to an old
mine on the highway back through Hoopa
and 2 or 3 miles farther north. This had
a good horizontal shaft with several vertical
ones going upward. There was a good bit of
water in it and the walls were mostly seeping.
No bats. Then went back and checked the
attic of Brinjards Grocery store in Willow
Creek and a neighboring ranch house.
No bats.

Set + traps on the grassy "island" of
Horse Sinto Creek, and the lower grassy
patch of the Trail. Also put some along
a small but vigorous creek about $\frac{3}{4}$ mile
south along the road from Horse Sinto - called
Ginseng Creek. This is quite rocky and very
moist, being well shaded by maples and
the steep banks. Has many sword, bracken

Murray
1949

43

Journal

Aug 29 ~~3~~ Miles N Willow Creek, 700 ft., Humboldt Co., Calif.
and maiden hair ferns which furnish
almost the entire undergrowth.

then returned armed to the scene of
the big bats. They did prove to be Eptesicus
fuscus, of which I shot 2.

Aug 30 Same location

In traps in the grass at Horse Pinto
Creek caught 1 ♂, 1 ♀ Microtus californicus,
1 Sorex vagrans. Those up the trail held
1 Sorex trowbridgii, 1 Sorex paucipius, 2
Neurotrichus gibbii. The traps on
Censeng Creek had only 2 Peromyscus (disc.)
also left the line along Coon Creek but
did not rebait and set the traps. These had
2 Peromyscus (disc.) and 1 Sorex trowbridgii.

The last 2 days have had high fog which
lifted by 8 or 9 A.M.

Left out only the traps on Censeng Creek
and also put some downstream below
the road. Again sword, bracken and maiden
hair fern, a little denser and moister,
with some tan oak, dogwood and small
maples. Large maples gave dense overhead
shade. Put more traps in a flat area
above Horse Pinto Creek with ^{exposed} open clumps
of grape, primarily. There was a little
water running through which stood in

Murray
1949

Journal

Aug 30 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.
sloppy muddy pools, with a little green grass around them. Put a few traps around them and also in raspberry thickets. there were tall alders and maples in the area, a little thin.

Found an Anides ferreus (lost) under a log over Ginseng Creek

Aug 31 Same location

In traps by Horse Sinto Creek caught 3 Peromyscus maniculatus (2 disc) and 1♂, 1♀ Microtus californicus. The Peromyscus were in clumps of grape, the Microtus both in tall green grass with raspberry.

The Ginseng Creek traps had just 1 Peromyscus. (disc). Can't explain the failure of this promising looking spot. Its only noticeable difference was the lack of small shrubs, though the ferns gave dense cover.

In the afternoon I went up the Three Creeks Road, starting at Willow Creek and proceeding west on a steep climb. This was mainly a southwest facing slope and was correspondingly dry. There were Douglas Firs, usually scattered among madrone, maple, chinquapin etc. Found patches of Arctostaphylos manzanita and Ceanothus cuneatus. In one spot noted some incense cedar, and at lower levels

Murray
1949

Journal

Aug 31 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.
There was ponderosa pine mixed with the fir. Saw Eutamias townsendi at Brannan Creek, a small, swift stream over rocks. Checked every building possible for bats. - this amounting to 5 or 6, but no luck. Some were very suitable. The weather was quite hot and the sun beat down heavily.

Today Dr. Pearson left. Expect Dr. Seopold tomorrow night.

Set out 40 traps just north of Willow Creek. Along the highway found a stream leveling out prior to emptying into the Trinity. There were large blackberry brambles, with the water ramified into little rivulets through the clumps. Some were clinging to several tall alders in the area. Adjoining, put traps in tall (2 ft.) dry grass, completely ungrazed and bearing many seed heads. Saw frequent Microtus runs, fresh droppings and scattered seeds. Part of the grass was under a walnut orchard. Crossed the highway and put a few traps along the stream where it was a more typical flow over rocks, with a quite dense and particularly varied shrub growth along the banks.

Murray
1949

Journal

Aug 31 3 mi N Willow Creek, 700ft, Humboldt Co., Calif.

Had alders and maples, with fir up the hillside. Shaded except from the north.

Spread the rest of the traps along the road in moist grass of the bank, or where some water was draining through and had Equisetum and green grass.

Sept 1 Same location

Caught 6 Peromyscus (saved 3), 1 Sorex trowbridgii.

In the afternoon hunted reptiles along the road going toward Willow Creek. Found a Gerrhonotus coeruleus ^(lost?) in the road where it was shaded by maples and tan oak along the side - still north facing slope. As I rounded the bend it became a south-west facing slope, very dry and sun beaten. Going down the hill there were mainly black oaks, with madrone and some Douglas firs mixed in. Dry leaf litter with a little parched poison oak. Part way down found a Citellus beechyi, surprisingly unafraid, which ran up within a few feet of me. Saw 4 shinks in all, 2 while returning. Two were small blue-tails. Reached the flat ground at the bottom of ^(lost?) the hill and found a Diadophis amabilis in the road where it was quite shady from

Murray
1949

Journal

Sept 1 3 mi N Willow Creek, 700ft, Humboldt Co., Calif.

firs and large black oak. Again plenty of dry leaf litter. Hunted around in very dry brush on the flat but found nothing.

Set traps out and expanded along an old road where a small stream flow spread out in a muddy patch. there was green grass, green herbs and blackberries. Saw very young T. ordinarius.

Afterwards tried to find a good place to shoot bats. Finally settled down on a dry flat above the river where just a few, both large and small, were flying. Shot 1 but could not find it.

Sept 2 Same location

Caught 1♂ Reithrodontomys megalotis, 1♂ Peromyscus truei, 6 Peromyscus maniculatus (5 disc). Note that all of these were males with testes enlarged (except 2 maniculatus released and not checked). Those put up yesterday were the same.

In afternoon went with Dr. Leopold to Horse Sinto Creek. Went up the trail, then down the slope to the creek. Saw at least 2 dippers in the water.

Set traps along the creek, upstream from where I had been before. Ran through areas of both green and dry grass, usually with clumps of blackberry. Shaded to varying

Murray
1949

Journal

Sept. 2 3 mi N Willow Creek, 700 ft, Humboldt Co., Calif.
degrees by alders. Parts were quite moist
with green herbs. Many of the traps were
on the bank along the edge of the stream.
Put out 48. Found another Diadophis
amabilis, and a thamnophis elegans,
both along the rocky edge of the creek - late
afternoon with the sun gone behind the
ridge. Waited by the creek for bats, but
only saw a few up high and not feeding.

Sept 3 Same location

Caught 5 Peromyscus maniculatus (3 disc),
2 ♂ Microtus californicus.

Later in the morning explored the road
up Campbell ridge and found a dry shale
slope with many black oaks. Sceloporus were
common here. Looked like good shrike terrain.
Found I could get to the river farther
back up the road, and found a flat, rocky
and very dry area with Arctostaphylos manzanita.
Might be a decent place to shoot bats, which
this area needs. Several Citellus becheri
here. Heard valley quail.

Rebaited the same trap line, this time
adding walnuts which I did not have last
night (oatmeal). Saw a thamnophis elegans,
a very young one, and collected a Cerrhonotus
coeruleus, both in grass on the flat near the

Murray
1949

Journal

Sept 3 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

creek. Now have noticed quite a few coerebians active after the sun has set, around 4 to 5 P.M.

Went downstream to the Trinity, about a mile distant. On the way found a slightly brackish pool of water in the then broad stream bed. This apparently had a flow in high water. Collected a Triturus rivularis in the water. Found a Sceloporus occidentalis under a log in the open. Caught an aquatic Thamnophis elegans (same as another recently coll.) but lost specimen. Near edge of small stream flow.

Hoped to get good bat shooting in the open spaces of the streambed, but saw very few. Shot 1 Eptesicus fuscus.

Sept 4 Same location

Traps had 1 Neurotrichus gibbsii, 2 Sorex trowbridgii, 1 ♀ Reithrodontomys megalotis, 2 Peromyscus maniculatus (disc.). Reason for catching shrews today and not yesterday might be attributed to addition of walnut to the bait. There were plenty of empty traps left before. I have a vague idea that the shrews have been largely second night catches thus far.

Took a last desperate try for bats, looking through a couple of barns in Willow Creek, but still no luck.

Murray
1949

Journal

Sept 4

3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Then visited an old trapper in Willow Creek named Thom (sp?). He is a taxidermist of no very great skill and has some of the larger animals of the area. Said Bassarius was rather common and had a few mounts. Had 2 Mephitis which he did not think was too common. Claimed he had seen Neotoma cinerea in the high country. This was previously verified by Patterson, a neighboring rancher. Indicated that bobcats and bears were not so numerous here but more so up higher. Had skins for both. Of course also had Spilogale, raccoons and deer. Said a few rattlesnakes showed up in the area.

Sept. 5

Enroute Red Mountain, Trinity Co., Calif.

This morning broke camp and drove to Weaverville. On the way noted quite a bit of digger pine on the south facing slope along the Trinity River. The other side was largely Douglas fir. 6 mi W. on the road from Weaverville, found a Thamnophis elegans DOR. 4 mi W found a Dipodomys heermanni DOR. Both were along an arid stretch of digger pine, Ceanothus cuneatus, and Arctostaphylos manzanita. From Weaverville proceeded to Hayfork, then to Peanut. About 7 mi by road ENE Hayfork, found a Crotalus viridis DOR. Again in arid

Murray
1949

Journal

Sept 5 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.
brushy country. Left the highway ~~State~~
about 20 mi SW Peanut and went up a
steep road to a point about intermediate between
Red Mountain and Dubakella Mountain —
on the ridge running between them. Found
a very attractive camp with a spring and
a metal tank full of water. The forest here
is quite mixed, with white fir the most prevalent.
There is also ^{Jeffrey} ~~Ponderosa~~ pine and incense cedar
in ample quantity, with Douglas fir less common.
At least around the ridge the growth is not
dense, and there is practically no undergrowth
beneath the trees. There are several patches
of chaparral on this, the north facing slope
(near top), and much on the other side. Consists
of Ceanothus cuneatus, Ceanothus cordulatus,
a manzanita, Purshia tridentata, and others
less numerous. Most of these are heavily
browsed by deer. There are some practically
bare spots. In some parts there are numerous
garry oaks, and a dwarf variety forms an
important part of the chaparral.

Set out 50 Museum Specials, running
part along a dribble of water from
the spring under pines and firs, scattered
with no undergrowth. Part went through
dry brush, mainly Ceanothus cordulatus

Murray
1949

Journal

Sept 5 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

The rest were in fir, pine and cedar forest, not very dense except for one patch.

Quite chilly tonight with wind blowing.

Sept. 6 Same location

Caught 1 ♂ Peromyscus maniculatus,
1 ♀ Eutamias amoenus, and what I took
for a Microtus californicus, though it was
in Ceanothus cordulatus with bare ground
beneath

There are 3 species of chipmunks here,
Eutamias amoenus, sonomae, and townsendi.
Thus far sonomae has appeared to be almost
exclusively in brushy areas, and rarely
showing itself. Amoenus is common,
frequently around logs in scattered conifers.
Townsendi seems the less numerous of
the three.

There are very many Sceloporus
graciosus, very tiny, on the ground around
the brush. Adults are somewhat less common.

In the afternoon went down the drainage
behind camp, north facing slope, until I
struck a bit of water. At first it was in
pools with little movement, and going under
ground at intervals. Found a Dicamptodon
larva in one. Temp. 13.0°. After the fork
joined with one from Dubakella Mt., the

Murray
1949

Journal

Sept 6 Red Mt., 5300 ft., 14 mi N Hayfork, Trinity Co., Calif.
flow increased, though was not vigorous until farther down. Found several Dicamptodon larvae in pools with quiet water, and farther down, with a flow. Picked up 2 Hyla regilla along the stream. Saw 2 Rana boylei and collected 1. Both were in strong flow of water. There was never much vegetation along the creek and the banks were dry. Called Dubakella Creek. Both slopes were covered with rather thin timber, growing denser down the slope. the Douglas fir became more and more frequent until it was dominant around 4000 feet and below. Still had Ponderosa pine and white fir, with cedar irregular. Climbed back up the ridge to just west of Red Mt. Below the ridge found scarcely any brushy areas on this^N side. There are a number of very large outcroppings of rocks.

Got back too late to reset traps, but the line is out with most baited.

Sept 7 Same location

Caught 1 ♂ Microtus californicus?, 1 ♂ Eutamias amoenus, 1 Gerrhonotus coeruleus. the Microtus was again in a mass of Ceanothus cordulatus

Drove down the ridge to Red Mountain

Murray
1949

Journal

Sept 7 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.
proper, which is about 2 miles south of camp. There is an abandoned lookout and guard station there. Near a spring saw a blue grouse. Parts of the slopes over there seem more heavily forested, though the ridges are again brush. Some places the unidentified mammalia forms thick growth to the exclusion of other things. In others Ceanothus cordulatus does the same. Where there are scattered pines and firs, the scrub garry oak often becomes quite dense. Full sized oaks are not numerous.

Added 25 traps to make a total of 75, putting part in white fir, cedar and yellow pine and thence over the ridge in Ceanothus cordulatus. Moved about half of the others through more Ceanothus and a dense patch of 10 ft. Garry oak with a thick litter of dead leaves.

There are a few Sceloporus occidentalis in the area, far outnumbered by the gerrhonotus. They are frequently in mixed brush and trees. Have seen two rush up trees to escape.

Sept 8 Same location

Caught 3 ♀, 1 ♂ Peromyscus maniculatus, 1 ♂ Eutamias sonomae.

In the afternoon hunted the brushy slope around camp. In checking traps found 1 ♂

Murray
1949

Journal

Sept 8 Red Mt, 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.
Eutamias amoenus. Saw a jackrabbit in edge between bare slope of Ceanothus, and pine. Also believe I saw a bobcat through the brush, though I could not swear to it. Shot a hairy woodpecker and saw and heard several others. Also a white-headed woodpecker. All were working in Jeffrey pine.

In late afternoon caught a Sceloporus occidentalis on the base of a tree.

Put out 25 more traps and moved a few more, all in similar habitat. Now have 100.

After dark waited in oak woodland and listened. Could hear woodrats scrambling around and from this found 2 nests.

Sept 9 Same location

Caught 2 ♀ Eutamias amoenus, 5 ♂, 1 ♀ Peromyscus maniculatus.

In the afternoon found another ♀ Eutamias amoenus and 2 Junco oregonis in traps in Ceanothus cordulatus. Found a Thamnopis elegans in a partially shaded spot.

Reset all traps and left them in place. Also put a Schuyler by each woodrat nest. The last 2 days have been stormy, with irregular rain and thunder. Today it seemed to be breaking up.

Murray
1949

Journal

Sept 10 Red Mt., 5300 ft., Trinity Co., Calif.

Had 2♂, 1♀ Eutamias amoenus, 1♀ Eutamias sonomae, 1♀ Dipodomys heermanni, 1♂, 1♀ Neotoma fuscipes. The Dipo was at the top of the ridge in a broad area of Ceanothus cordulatus.

Spent quite a while today observing the chipmunks.

Sept 11 Same location

Left this morning for Berkeley.

In passing Ragan Meadows noticed some lush green grass which might bear investigating.

SPECIES ACCOUNTS

BIRDS

Mammals

Amphibians - Reptiles

Birds

Murray
1949

Hirundo rustica

Aug 11 Big Lagoon, 550 feet, Humboldt Co., Calif.

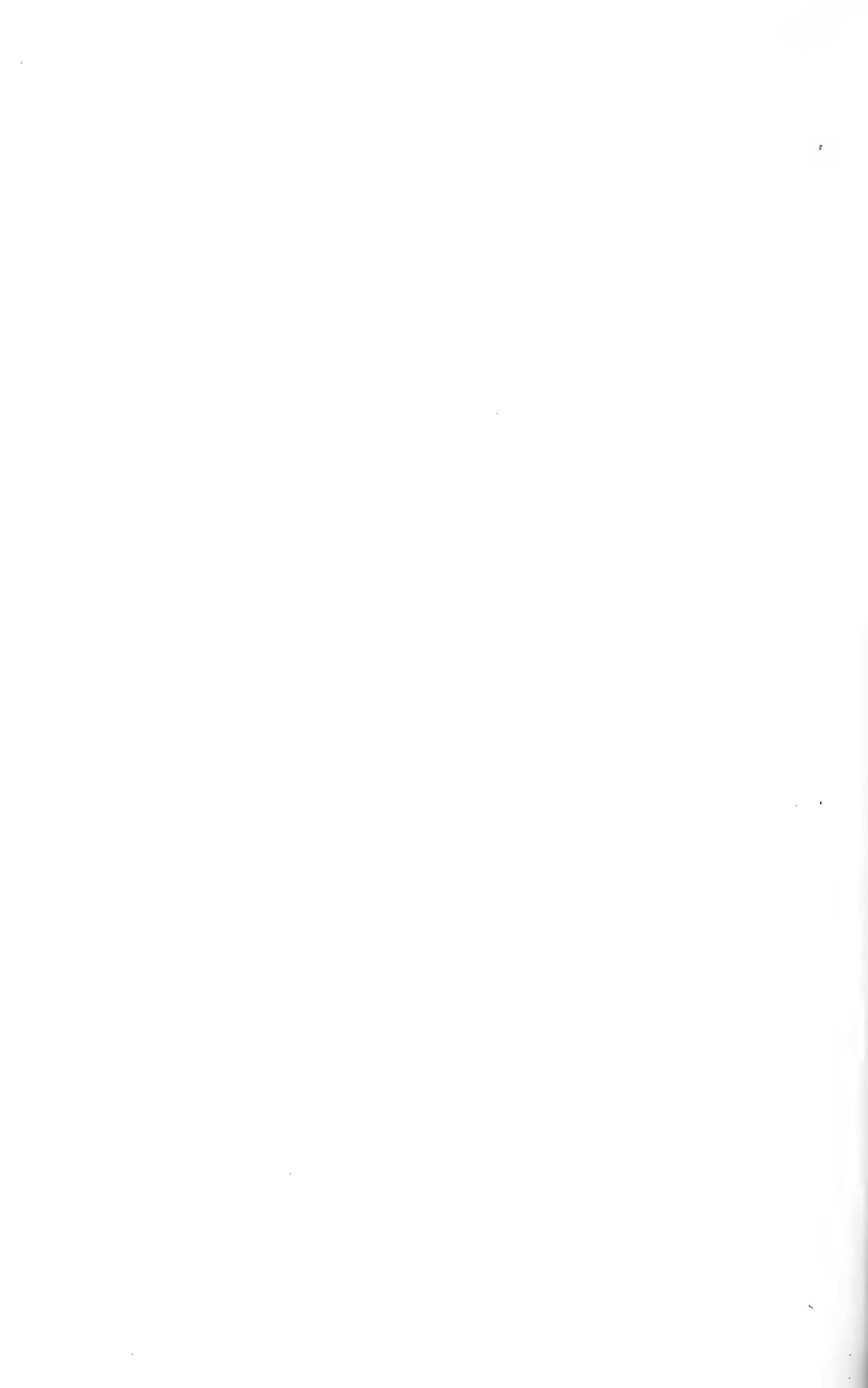
Shot 2 of a group sitting in the middle of barn roof. This was at the abandoned ranch NNE of camp and up the mountain from the lagoon, where went to hunt bats. Brushy hillside, dry. There were several mud nests in the barn and house.

Murray
1949

Hylocichla guttata

Aug 21 French Camp, 3100 ft., Humboldt Co., Calif.

Shot 1 in Douglas fir forest, near the edge of a grassy slope. Well shaded spot.



Murray
1949

Junco oregonis

Aug 21 French Camp, 3100 ft., Humboldt Co., Calif

Last evening saw a young bird looking very sick, and freely flying into camp. this morning it was dead, and turned out to be missing the upper bill. Skinned it.



MAMMALS

Murray
1949

Sorex + rowbridgii

Aug 10 Big Sagoon, Humboldt Co., Calif.

Caught 1 ♀ in 25 traps set in redwood forest, in thickets of salmonberry and thimbleberry. Well-shaded, bordering on a grassy area. Also took Zapus and Sorex pacificus from this habitat, more abundantly.

Aug 21 French Camp, 3100 ft., Humboldt Co., Calif.

1 ♀ in 35 traps running through ^{Doug.} fir and incense cedar, with bushy undergrowth of Rhododendron occidentale and tan oak. Although traps were also in moist places, the shrew was in a dry spot.

Aug 29 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Had a few traps on a small "island" in Horse Sinto Creek. Dry grass with patches of raspberry, shaded by tall alders. Caught 1.

Also traps up Horse Sinto trail. Another shrew was in moist green grass and herbs on a shady bank.

At camp had traps along Coon Creek, caught 1.

Aug 30 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

Again caught 1 in green grass and herbs on Horse Sinto trail. Had 1 in traps along Coon Creek.

Sept 4 4 1/2 mi N, 1 1/2 mi E Willow Creek, Humboldt Co., Calif.

Had one in trap placed in a bank of green grass, within a few feet of Horse Sinto Creek. Also raspberry bushes. Shaded by tall alders.

Murray
1949

Sorex trowbridgii

Sept 4 4½ mi N, 1½ mi E Willow Creek, 800 ft, Humboldt Co., Calif.

Another was in tall dry grass of a flat just above the creek. Again scattered raspberries.

Murray
1949

Sorex pacificus

Aug 11 Big Sagoon, Humboldt Co., Calif.

1 ♂ out of 30 traps in red wood forest with thickets of salmonberry and thimbleberry, ferns and green herbs.

1 was in piles of driftwood shaded by alders near the creek.

Aug 12 Same location

Had 1 ♂, 1 ♀ again in redwoods; same line as yesterday - under salmonberry thickets. Yesterday found 1 in afternoon, evidently a daytime catch.

Aug 13 Same location

Took 1 ♀ in 15 traps set in dense alder and spruce woods. Undergrowth was moist but not thick, mostly ferns and nettles. Upon checking this line in the afternoon, found 1 at the edge of the woods in salmonberry and nettles which was not there this morning.

Aug 14 Same location

Had 1 in about the same place as the daytime catch of yesterday.

In 30 traps had 1 in salmonberry under redwoods.

Aug 15. Same location

Caught 1 in thick spruce and alder woods next to camp. In moist fern clump. Also 1 in another spruce alder set of 25 traps.

Murray
1949

2

Sorex pacificus

Aug 16 Big Sagoon, 550 ft., Humboldt Co., Calif.

Had 40 traps set on bushy hillside
(see journal) of Rhododendron occidentale,
blackberry, Vaccinium ovatum, and salal. —
dense growth 4 ft high. Seemed dry
and sun parched, and soil was dry.
Caught 2, one a breeding ♂.

Aug 27 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Murray
1949

Neurotrichus gibbsii

Aug 14 Big Lagoon, Humboldt Co., Calif.

Took one in redwood forest out of 15 traps after several days trapping. Was next to a rotted log in dense but low growth of oxalis. thick layer of moist dead redwood leaves. Well shaded. Found several well formed runways passing along the earth surface under the leaf litter.

Aug 16 Big Lagoon, Humboldt Co., Calif.

Caught another nearby, this time in a clump of ferns. Leaf litter was a little thinner and runs were poorly formed, amounting to spaces among twigs again under the layer of leaves.

Aug 19 Big Lagoon, Humboldt Co., Calif.

Had 45 Traps along an old road, north facing slope, with spruce, hemlock and alder. Undergrowth was salmonberry, thimbleberry and blackberry with ferns. Caught 1♀ behind a log, very moist and shaded by ferns, next to a very small stream flow.

Murray
1949

Myotis evotis

Aug 22 Schoolhouse Peak 2900 ± ft., Humboldt Co., Calif.

Pulled away a block of exfoliating rock from a large outcropping in the middle of grassy pasture. Piece of rock was about 2 in. thick, and revealed a small crack apparently closed except from the side. The outcrop was full of such crannies, with loose pieces of rock, but found no more.

Dr. Pearson found another in an open crack in another outcrop.

Murray
1949

Myotis californicus

3 mi N

Aug 26 Willow Creek, 700 ft, Humboldt Co., Calif.

Found that bats were flying up and
down over the ^{Raccoon} Creek at dusk. They seemed
to concentrate over one section not quite
so completely sheltered by the tall maples—
were feeding. Did not see any drink. Netted
1♂, 1♀.

Murray
1949

Eptesicus fuscus

Aug 29 Willow Creek, 500 ft., Humboldt Co., Calif.

Had noted large bats flying here at dusk beside the Willow Creek Hotel. Tonight shot 2 and they proved to be this species. The flight seemed rather slow and straight. They appeared to stick close to several firs which were the only tall trees in the immediate area. Began to fly at early dusk.

Murray
1949

Eutamias amoenus

Sept 6 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

Caught 1 ♀ in a mouse trap set in Ceanothus cordulatus at the edge of jeffrey pine, white fir and incense cedar. They are the commonest of 3 species here - townsendii and sonomae the others.

Sept 7 Same location

Had 1 ♂, again in a mouse trap close to the other one. Have watched several and found them generally in very open fir, pine and cedar or on brushy slopes with a few trees scattered through. There are likely to be fallen logs, stumps or rock outcrops about which they run. In this regard they are somewhat intermediate between sonomae which is always in the brush, and townsendii which is most often in denser conifers. Amaenus appears beside both of these species in their habitats, but viewed overall seems to have a distinctive position in preferring a broken area with both trees and brush.

Sept 8 Same location

1 ♂ was in a mouse trap in Ceanothus cordulatus, not far from a patch of oak woodland.

Sept 9 Same location

In morning found 2 ♀ in adjoining traps. They were again in Ceanothus cordulatus, with several pine trees about 30 ft. away. Both were still alive and had evidently been caught earlier

Murray
1949

21

Eutamias amoenus

Sept 9 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.
in the morning. In the afternoon found another
♀ in *Ceanothus* well out on an exposed slope.
While out on the hillside in *Ceanothus*, they
frequently climb up and sit in the top of the
brush ^{1½-3 ft.} in plain sight, or scoot about between clumps.
The sonomae avoid showing themselves at any
time. Amoenus will sit motionless until
approached within 10 or 15 feet, then rush off
to another brush clump. They may often be
chased from clump to clump without showing
much concern or making an effort to stay concealed.
Again they differ from sonomae in the same
habitat, which freeze ~~at~~ ⁱⁿ the base of a bush
until one may almost reach out and touch them.
When startled amoenus has a high pitched
chatter which then settles into a note intermediate
in pitch between the other two species. It varies
in rate with the degree of excitement. Though
the call is given when one is a good distance
away or the chipmunk is concealed, by the
time a good observing range is reached and it
is located if in the open, not another sound is
given. This silence is coupled with a freeze, often
in an awkward position. If no further approach
is made it may remain in that position for
several minutes without a move. I have not
yet heard a sound from one which has struck this

Murray
1949

3.

Eutamias amoenus

Sept. 9 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

pose. It is difficult to figure out what degrees of surprise, fright or whatever it may be, are required to elicit a call, then silence and the motionless attitude. The former may be general alarm at my approach, and the latter sensing that attention is directed toward them. A passing cooper hawk causes a very excited chattering - their actions have not been observed.

Sept 10 Same location

2♂ were in mouse traps through Ceanothus, again not far from pines and firs. The mixed tree and brush habitat seems to be holding up quite well, though quite a few have been far out on exposed slopes of Ceanothus.

In going down the mountainside along Dubakella Creek, ^{Sept. 6} found that amoenus disappeared at least by the time I had dropped 1000 ft., and probably sooner. There was mostly fairly dense forest, becoming principally Douglas fir. There were few open places. Found townsendi the only chipmunk

When near trees, they are much inclined to run part way up one for escape. I have not seen any run high in a large conifer. They often appear in pines, firs and cedars to about 25 ft. up, and frolic readily up and down the trunks, sometimes chasing one another. They do not show the

Murray
1949

4

Eutamias amoenus

Sept 10 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.
dependence upon climbing that townsendi does,
however.

Murray
1949

Eutamias townsendi

Aug 26 French Camp, 3100 ft., Humboldt Co., Calif.

Have found them rather common here in Douglas fir and incense cedar forest. Not timid and answer a squeak very readily.

Sept 4 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Just a few here in the dense maple and Douglas fir slope above camp. Heard but never seen. More common on the Three Creeks Road just below Brannan Mt.

Sept 16 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

Present with 2 other species, sonomae and amoenus. I have found them below the ridge where there is moderately thick Jeffrey pine, white and Douglas fir and incense cedar. Their habitat is invaded slightly by amoenus, which doesn't get into dense forest but uses trees on the edge or where they are slightly scattered and mixed with brush. This afternoon went down the slope along Dubakella Creek and found that not far down townsendi became the only chipmunk. Here there was fairly dense forest, becoming mostly Douglas fir.

Murray
1949

Eutamias sonomae

Sept 8 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

Caught 1♂ in a mouse trap in an exposed patch of Ceanothus cordulatus. At crest of ridge - no wooded area within 50 feet. Some shrub garry oak and manzanita nearby. This species seems confined to open slopes of brush, of which Ceanothus cordulatus and cuneatus are the usual components. Have neither seen or heard any among trees. Are very secretive, and do not appear to come out into the open. The habitat is partially occupied by amoenus, but they freely climb to the top of the bush and sit, or run through it or run between clumps. I have not seen sonomae do any of these things. Am not even sure it leaves the ground.

Sept 10 Same location

Caught a ♀, again in a mouse trap in broad growth of Ceanothus cordulatus on the ridge. The distribution in this area must be largely confined to the ridges where there are exposed brushy areas. On Sept 6, in following down Dubakella Creek drainage, found none from just below camp on down - was more or less solid forest.

Have not seen many, though heard them regularly. The call is very high and thin, quite bird like. May be a single repeated chirp, or

Murray
1949

2

Eutamias sonomae

Sept. 10 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

a chattering, sounding bat like, when excited.
The sound is very hard to locate. When approached
the chipmunks become silent and remain
motionless at the base of their bush. So concealed,
they wait until one is within 4 or 5 feet before
rushing away.

Murray
1949 ✓

Sciurus griseus

Sept 1 3 mi N Willow Creek, 700 ft., Humboldt Co, Calif.

Encountered one on the road just up the hill from camp. It immediately ran up into a fair sized tan oak tree and began repeatedly giving a sharp call, having ~~the~~ a squeak to it but with a deeper tone involved. Resembled a bark, and even more, a bicycle horn. Was quite excited and whole body gave a jerk with each note. Repeatedly drummed against the branch with one forefoot or the other, though made little sound. Had a threatening manner, or so it seemed. Kept this up for about 15 minutes, even when I sat down and was immobile. As I walked down the road, could hear the call as long as was within earshot.

Murray
1949

Thomomys

Aug 24 French Camp, 3100 ft., Humboldt Co., Calif.

Had 4 traps out on exposed slope, south facing, just across the road from camp.

Soil varied from hard to very soft, quite irregularly, and was full of small rocks.

There were short bracken ferns and thin almost dry grass. At noon had caught

1 ♂, 2 ♀. They are smaller and more reddish in color than botatae.

Gopher mounds are plentiful here, in grassy spots, burns and patches in the Douglas fir forest, many of which have no surface vegetation.

Murray
1949

Dipodomys heermanni

Sept 30 Red MT, 5300 ft, 14 mi S Hayfork, Trinity Co., Calif.

Caught 1 ♀ at the top of the ridge in one of the larger patches of *Coarctothus cordulatus*. Ground bare, no other kinds of growth. Ground hard and gravelly. Have been trapping in this habitat for several days.

2000

Murray
1949

Reithrodontomys megalotis

Sept 2 Willow Creek, 500ft, Humboldt Co., Calif

Caught in tall, fairly dense, dry grass.
Had figured Microtus runs for the spot.

Ground dry, but about 15ft from small
flow of water. Blackberry clumps closely.

Sept 4 4½ mi N, 1½ mi E Willow Creek, 700ft, Humboldt Co., Calif.

1♀ was in juicy green grass a few feet
from the edge of Horse Sinto Creek. Also
some raspberry bushes, shaded by tall alders.

2

Murray
1949

Peromyscus maniculatus

Aug 9 Big Sagoon, Humboldt Co., Calif.

1♂, 1♀ in 45 traps set along salmonberry and thimbleberry thickets and a barn. 1 was under the barn.

Aug 10 Same location

Had 65 traps in salmonberry along the Maple Creek, in open pasture next to logs, and through some spruce woods. Caught 1♂, 4 imm and discarded.

Aug 11 Same location

Same traps, 45 left, had 3 imm., discarded.

Aug 13 Same location

1♀ out of 15 traps set beneath salmonberry bushes in redwood forest. Moist, well shaded.

Aug 14 Same location

25 traps in spruce and alder forest. Moist scattered undergrowth of ferns and green herbs. 1 ad, 1 imm. in hollow logs, both discarded.

Aug 15 Same location

15 traps in moist spruce and alder forest next to camp. Salmonberry undergrowth with ferns and grass. 2 imm. discarded.

15 traps in redwoods had 1♂, disc.

Aug 16 Same location, 550 ft.

Brushy hillside of *Rhododendron occidentale*, salal, blackberry etc. 40 traps through it and around a barn. 3♀, 2♂ (4 imm) disc.

Murray
1949

Peromyscus maniculatus

Aug 17 Big Sagoon, Humboldt Co., Calif.

In 50 traps running through redwood forest, but mostly in spots where there were some lowland and Douglas firs, caught 4, all discarded.

Aug 19 Same location

Had 45 traps along an old road through spruce, hemlock and alder, with salmonberry, blackberry, thimbleberry undergrowth. Many firs. Crossed several small streams. Caught 3♂, 4♀.

Aug 20 French Camp, 3100 ft., Humboldt Co., Calif.

Set 35 traps in fir forest, starting with a bit of stream, then just in Douglas fir and incense cedar, with tan oak and Rhododendron occidentale undergrowth. Several grassy patches, and a moist spot. Caught 7 (saved 2♀)

Aug 21 Same location

Same trap line, caught 3 (2 disc.)

In 15 additional traps along open ground with fir needles, under large firs, took 1, disc.

Murray
1949

Peromyscus truei

Sent 2 Willow Creek, 500 ft., Humboldt Co., Calif.

Had traps along moist grassy and shrubby area. Trap at end bordered on dry brush, unidentified, and had 1 ♂.

Murray
1947

Neotoma fuscipes

Aug 13 Big Lagoon, Humboldt Co., Calif.

Found a nest in a redwood stump 10 feet high. There was a pile of twigs on top, but evidently the bulk of the nest was down in the much rotted stump.

Aug 17 Same location, 4000 ft.

Set 5 traps for 4 nests in red woods on the hillside above the lagoon, and NNE of camp. Trees were in dense small patches. In one there were 2 ground nests and one in a tree, all built from redwood leaves and branches. In another group had 1 tree nest 10 ft up. Also found a nest in brush nearby and set a trap. There was some gnawing on the bark of redwood trunks, usually in bands. It was not deep, and never to the cambium.

Aug 18 Same location

Caught 1 ♂ in nest in tree, alone in a small grove. Nest about 10 ft high; trap on one ledge of it. There were fresh Murica californica leaves visible in one hole.

Also took 1 ♀ in nest in the brush.

Aug 20 French Camp, 3100 ft, Humboldt Co., Calif.

Caught 1 ♂ in a museum special mouse trap; fir and incense cedar, not too thick, with shrub growth of Rhododendron occidentale,

Murray
1949

Neotoma fuscipes

Aug 20 French Camp, 3100 ft; Humboldt Co., Calif.
Holodiscus discolor, Phrylocarpus capitatus
and others. a number of traps on the line
had been snapped and overturned.

Aug 21 Same location

Took a young ♀ in mouse trap on same line,
not far away from first. Again several nearby
traps had been overturned.

Aug 25 Same location

Had set 3 Schuyler traps by 3 houses, all
in the same clump of Douglas fir and incense
cedar. Caught nothing.

Murray
1949

Clethrionomys californicus

Aug 17 Big Sagoon, Humboldt Co., Calif.

Set 50 traps where Dr. Miller had camped in 1942 and caught Clethrionomys. Area was mixed redwoods, spruce and firs, both Douglas and lowland. Kept traps in the firs as much as possible. 1 ♂ was under a fir tree on shaded but fairly exposed bed of needles. Some clumps of ferns around, and a little salmonberry.

Aug 29 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

Had set traps up Horse Linto Trail, on the hillside above the stream. Found spots on the bank with green grass, raspberry, Comylus and green herbs - quite moist. There was some fir on the slope above.

Murray
1949

Microtus oregoni

Aug 13 Big Sagoon, Humboldt Co., Calif.

After 4 days of trapping in various habitats with only walnut bait, added oatmeal to all last night. Caught 1 ♂ in redwood forest - trap in salmonberry thicket bordering on a narrow patch of grass.

Aug 14 Same location

Out of 15 traps on second night in dense woods of alder and spruce, took 1 ♂. This was in a salmonberry thicket at the edge of the woods, and near grazed grass.

25 traps in another part of alder-spruce woodland had 1 (disc.). Was in a very moist, well shaded spot with a number of ferns and leaf mold.

Aug 15 Same location

Caught 1 ♀ in the same trap which caught a ♂ last night in the set of 15. Also had 1 ♀ in the other group in spruce and alder - moist clump of ferns and green herbs deep in the woods.

Aug 19 Big Sagoon, Humboldt Co., Calif.

Set traps along old road with a mixture of spruce, hemlock and alder. Salmonberry, blackberry, thimbleberry undergrowth, with many ferns. Small streams crossed and furnished moisture. Caught 1 ♀,

Murray
1949

Microtus californicus

Aug 16 Big Sagoon, 550 ft., Humboldt Co., Calif.

Had traps under a barn and adjoining platform, with surrounding closely grazed dry grass pasture (see journal). Caught 1 ♀, 1 discard. Area was dry and soil fairly solidly packed.

Aug 30 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

Had traps set in a sort of island formed by a partial split in the flow of Horse Pinto Creek. There was tall, fairly dense, dry grass, raspberry thickets, with big maples and alders giving moderate shade. Found no runs. Caught 1 ♂, 1 ♀. Had had traps there the previous night with no Microtus.

Aug 31 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

Trapped on flat just above Horse Pinto Creek, mostly in clumps of grape. Had a few traps in green grass and herbs along some standing water from a small stream flow. Caught 1 ♂, 1 ♀ out of 4 or 5 potential chances.

Sept 3 Same location

Traps ran up the edges of Horse Pinto Creek, hitting mainly grassy banks and flats of green or dry grass. Lots of blackberry clumps. Took 1 ♂ in bank of green grass, and another ♂ in dry patch of Ribes in end trap just beyond any grass.

Murray
1949

Microtus californicus

Sept 9 4½ mi N, 1½ mi E Willow Creek, 800 ft., Humboldt Co., Calif.

In baiting the same trap line found one, definitely a daytime catcher, in lush green grass quite close to this morning's specimen in green grass. (disc.)

Sept 6 Red Mt., 5300 ft., 14 mi N Hayfork, Trinity Co., Calif.

Caught what must be this sp. under a Ceanothus cordulatus bush. At the edge of a large very dry patch of it, but just downhill from thin Ponderosa pine, white fir, and incense cedar. No grass at all. Ground bare between bushes and beneath them except for a few dead leaves. The Ceanothus forms a thick surface covering. Ground dry, hard and gravelly. Comes closer to a habitat for Perognathus.

Sept 7 Same location

Caught 1 ♂ ^{to other} nearby in Ceanothus cordulatus, this time in the middle of the patch so as to leave no doubt of where he came from. Traps in adjacent coniferous forest and along water with no cover had nothing.

Murray
1949

Microtus longicaudus

Aug 13 Big Sagoon, Humboldt Co., Calif.

Out of 20 traps along grassy edge of lagoon, caught 1 ♀. Trap was under large sheet of corrugated iron.

Murray
1949

Zapus trinotatus

Aug 9 Big Sagoon, Humboldt Co., Calif.

Found a nest with 6 young mice, fully furred but eyes still closed. It was under a log in a grassy field, partially grazed. The nest had thin, tightly woven walls of grass, forming a distinct cup shape.

Aug 11 Same location

Caught 1 ♀ out of 30 traps set in redwood forest, with a thick, well shaded growth of salmonberry, blackberry, thimbleberry thickets, and many ferns. Trap was well into a thicket, bordering on a patch of green grass.

Aug 12 Same location

The same 30 traps in the redwoods had 2 ♀ (1 discarded), again in salmonberry thickets. In this habitat Peromyscus maniculatus, Sorex pacificus, and Sorex townsendii have also been taken.

Aug 13 Same location

15 traps in thick spruce and red alder forest had 1 ♀, lactating. Trap was in a deep, dark space beneath a log. There were ferns, nettle, and a variety of green herbs, but without any thick undergrowth.

Aug 14 Same location

1 ♂, 1 ♀ in 25 traps set in dense spruce and alder woods. Undergrowth moist ferns, nettles and green herbs.

Murray
1949

2.

Zapus trinitatus

Aug 16 Big Sagoon, Humboldt Co., Calif.

Had traps running through dry bushy growth of Rhododendron occidentale, blackberry, salal, Vaccinium ovatum and Baccharis.

this was at old ranch where before had looked for bats. Caught 1 ♀. S. facing slope

Aug 19 Same location

Murray
1949

Procyon lotor

Aug 12 Big Lagoon, Humboldt Co., Calif.

Found several droppings on top of stump 10 feet high. Contained many small seeds, probably of thimbleberry.

Sept 3 3 mi N Willow Creek 700 ft., Humboldt Co., Calif.

Tracks are common here in the road. Have seen tracks by the water at Horse Sinto Creek, and two eaten crayfish shells which might be coons (not near the tracks)

Amphibians - Reptiles

Murray
1949

Picamptodon ensatus

Aug 24 2 mi ± N French Camp, 1500 ± ft., Humboldt Co., Calif.

Went down the drainage directly over the ridge from French Camp. ^{Stream} It ran from a few hundred yards below the ridge as a trickle until several hundred more; by then it was a substantial flow, running about north and down a very steep slope. there were very tall Douglas firs, with a scattering of small redwoods and some incense cedars. the water poured over rocks of every size, up to fair sized boulders. there were many fallen logs over the stream. Maples, tan oak and Comulus lined the banks. the rocks were mossy, and there were many sword ferns and some grass along the water. Sawae were not numerous, but I saw probably 8 or 9. One in a large pool was quite large. Collected 5 or 6 smaller ones but found that an adult in the bag had eaten all but 1, apparently. All were seen in pools in the stream where the ~~turbulent~~ flow was not turbulent, though steadily passing through. they were resting on the bottom, and moved rapidly when disturbed. Some might have been under rocks, but a layer of sediment on the bottom obscured the view when disturbed. Had no thermometer. Water depth in most cases was 3 or 4 inches

Murray
1949

Dicamptodon ensatus

2

Aug 24 2 mi⁺ N French Camp, 1500[±] ft., Humboldt Co., Calif.

Also found 1 adult on the bank a few feet from the stream. There were a number of slabs of bark 1½ to 2 inches thick from dead Douglas fir. These were piled several deep - found the animal under an uppermost one. It was fairly moist there. He was active, though reacted slowly when uncovered.

Sept 2 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Gullion found a large larva with a thamnophis elegans partly swallowed. Snake was dead, had been swallowed head first. (See Gullion spec.)

Sept 6 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

Went down the drainage behind camp until hit Dubakella Creek, then followed it quite a distance down. At the upper part of the creek found a very small flow from pool to pool over very rocky bed. Even went underground in a very few places, with one substantial dry break which cut off about the upper 200 yds. In these pools, about 1 ft. or depth, found several rather small larvae. Widely scattered and not numerous. Water was not conspicuously moving. Estimate that this was about 4100 to 4300. A little farther down the flow became more vigorous, over larger rock masses. Here in still larger and up to 2 ft deep

Murray
1949

3

Dicamptodon ensatus

Sept 6 Red Mt, 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.
pools, found somewhat larger larvae. One
was 7 or 8 inches. Caught 4 altogether. Temperature
of the water was 13.2° up higher, and 13° lower
in the stream. NE facing slope.

Murray
1949

Ambystoma gracile

Aug 15 Big Sagoon, Humboldt Co., Calif.

Went up to check a pool where Gullion had found pond type larvae, presumably Ambystoma gracile. Area is about $\frac{1}{2}$ mile SE of camp, in spruce forest with alder and maple. The pool is long, evidently part of a stream cut off, and with no evident flow on the level ground. Ends in *Carex* bog at both ends after extending about 40 feet - not stagnant, however. Depth from 3 or 4 inches to $2\frac{1}{2}$ feet. Numerous clumps of *Carex* grow ^{at edge of} the water. To one side a fern glade, the other bank lined with salmonberry thicket. A maple tree is directly overhead and has dropped many leaves and branches which form a bottom layer. Water temp. 12.7. Found 3 large larvae starting to metamorphose, of which got 2. These tended toward deeper water. There were a number of smaller ones. All rested on the bottom, clinging to leaves or branches with all 4 feet, and appearing to move but little. When disturbed, they darted away or under leaves or branches, having innumerable hiding places available. If then left for a few minutes, most or all would reappear. Noticed some resting half under leaves.

Murray
1949

Triturus rivularis

Aug 26 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Within 3 feet of Coon Creek, a substantial stream, turned a Douglas fir log and found 4. Could not be sure whether they were underneath or in a crack, as it split in the process. It was well rotted, and quite moist beneath, dry on top. Sandy dry soil with a little green grass. They were very slow moving.

In the evening Dr. Pearson found one active on the bank of the stream as it became almost dark.

Aug 27 Same location

Found 2 under the bark of a Douglas fir log. Moderately moist but the wood beneath was firm and hardly rotted. Log was clear of the ground for most of its length. Temp. under bark 18.4. Log next to Coon Creek, well shaded by tall maples. No fir trees now remaining in the area.

Aug 29 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

Found one sitting on a rock at 8 AM. This was at the edge of a slight flow over many rocks which branched away from the main body of Horse Sinto Creek. It was cloudy but fairly warm at the time. The animal did not move rapidly but was more active than the others I have seen here.

Murray
1949

Triturus rivularis

Sept 3 4 mi N Willow Creek, 6000 ft., Humboldt Co., Calif.

Found one in a pool about 10×4 feet and 8" deep. This was in the bed of Horse Linto Creek, not far from where it drained into the Trinity River. Became quite broad, and this was near the edge where water evidently flowed in the Winter. Now had dried to a few pools. Slightly brackish. the Triturus was resting on the bottom.

Murray
1949

Batrachoseps attenuatus

Aug 9 Big Sagoon, Humboldt Co., Calif.

Found 2 (1 lost) in a large, well rotted spruce log of 3 ft diameter. There was a growth of moss and a layer of decayed leaves and soil on the surface. Both salamanders were extended full length in holes which they fit very snugly. They couldn't be pulled out and the wood had to be chipped away. These probably were holes of beetle larvae which were numerous throughout. Both were within an inch of the wood surface; at least the tail ends, and were more or less directed inward, so that the heads were closer to 3 inches deep. The area was well shaded with spruce and alder, and had a dense undergrowth mostly of salmonberry and thimbleberry. There was a small clearing of green grass next to the log. Also found 3 Ensatina in the same location.

Aug 10 Same location

Turned redwood logs in well shaded forest. Found 1 Batrachoseps under one with very moist soil, beneath thicket of salmonberry. Animal very active - much more so than those in Berkeley. Stripes on back a distinctive golden brown.

Murray
1949

Ensatina eschscholtzii

Aug 9 Big Sagoon, Humboldt Co., Calif.

In a large (3 ft. diam.) rotted spruce log found 3. Log covered with thick mossy growth and a layer of decayed leaves and soil. Specimens were in cracks in the wood covered completely by this surface layer. Two had egg masses and were curled up against but not around them. The wood was rotted until soft and only a trifle damp. The area was well shaded by large spruce and alders, with a dense undergrowth of salmonberry, thimbleberry and blackberry. There was a grassy patch around the log, quite green. Also found 2 Batrachoseps in the log.

Aug 25 1 mi S Coyote Peak, 3200 ft., Humboldt Co., Calif.

With Gullion and Cogswell tore apart rotted Douglas fir logs on SE facing slope near the ridge. Timber tall, dense and giving much shade. Area moister than most in the vicinity. One fir log about 45 ft. long and $2\frac{1}{2}$ feet thick yielded 10 specimens among us, all taken by peeling off the 1" bark and finding them beneath it. The bark was moss covered, and the surface beneath it was moist. There was some loose ^{fine} decayed wood in spots which crumbled away readily. There were also 3 Amia ferreus in the same log.

Murray
1949

2

Ensatina eschscholtzii

Aug 25 1 mi S Coyote Peak, 3200ft., Humboldt Co., Calif.

A few others were taken in various other logs nearby. Went over the ridge to the NW side, and found it much drier. Did find one log which was damp, and took 1 from under bark, similar to the other situation. Temp. under bark in soft wood - 12.8. Air temp. 17.6

Took another under bark of slab lying on ground. Somewhat drier.

Aug 29 4 $\frac{1}{2}$ mi N, 1 $\frac{1}{2}$ mi E Willow Creek, 800ft., Humboldt Co., Calif.

Found a small one under a rock in very moist sandy soil. In the bed of a branch from Horse Pinto Creek, with a slight flow of water within a few feet of the spot. That area exposed.

Murray
1949

Aneides ferreus

Aug 25 1 mi S Coyote Peak, 3200 ft., Humboldt Co., Calif.

2 each were taken by Gullion and Cogswell under the bark of a fir log in moist Douglas fir forest. At least 3 were in one large log along with 10 Ensatina. (See sp. acct. Ensatina for details, also Gullion and Cogswell notes)

Aug 27 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Two were under the bark of a Douglas fir propped up against a bank and thus not lying on the ground. Bark was moss covered. Beneath, it was moist and well rotted. One animal was directly under the bark, the other in a broadly hollowed out space an inch deeper, apparently the work of boring beetles. They were not very active. Temperature under bark — 18.4°

Air temperature 20.2

The log was a few feet from Raccoon Creek, well shaded by tall maples. There was bracken fern.

Aug 30 4 mi NNE Willow Creek, 750 ft., Humboldt Co., Calif.

A large fir log had 1 under its bark. Not rotted, and bark was hard to pull off. Fairly moist beneath — well clear of ground and hanging over Ginseng Creek. Somewhat shaded by banks and tall alders. Exceedingly active — specimen eventually lost.

Murray
1949

Bufo boreas

Aug 9 Big Sagoon, Humboldt Co., Calif.

Found one at the edge of a patch of red alder woodland, with dense undergrowth of salmonberry and blackberry - was on open ground. This was about 6:30 AM, foggy and cool.

Aug 12 Same location

Toads seem rather common here. Dr. Pearson has found 2 (my cat. Aug 11) near the barn nearby in the evening. There are dozens which have just metamorphosed at the edge of the lagoon, though the water is oily. These are just at the point of leaving the water. Gullion has found tadpoles in a pool.

Aug 18 Same location

Have noted a definite greenish, and almost venise cast to color of several small individuals.

Aug 20 4 mi NNE French Camp, Humboldt Co., Calif.

Gullion found 2 in evening^{dark} at an old abandoned ranch.

Murray
1949

Hyla regilla

Aug 8 Big Lagoon, Humboldt Co., Calif.

Found 1 active just after dark in dense green grass under alders.

Locality moist. Color was green

Aug 10 Same location

Partly metamorphosed individual was in a small, exposed pool. The tail was just starting to disappear.

Aug 16 Same location

Have seen several from time to time. Most have appeared in shady, moist spruce and alder forest, often in the grass. All so far have been bright green.

Aug 27 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

One was along Raccoon Creek on flat above the bank about 4 feet from the water. There were large maples overhead. Ground at that point was not moist - dead leaf litter with scattered small herbs and many small rocks. Was light gray-tan with distinct blotches. Have heard one croaking up on the hillside of maples with bracken fern, Cornus and much dogwood.

Aug 29 4 mi N Willow Creek, 750 ft., Humboldt Co., Calif.

Found 1 along the small swift flow of Gungah Creek. Among rocks; very moist and well shaded by ferns, then large alders and maples overhead. Same color as above.

Murray
1949

Rana aurora

Aug 12 Big Lagoon, Humboldt Co., Calif.

Young frogs are abundant, mostly in standing water connected with the creek, at the edge of the lagoon and in at least one very exposed pool. There are also adults, appearing to venture readily from the water. One was on a log in deep redwood forest, about 4 feet from the ground with very thick green shrubbery, and several feet away from a small trickle of water. I saw one on dry driftwood 20 feet from Maple Creek. This morning about 7 AM, one was sitting on mixed green and dried grass more than 25 feet from the edge of the lagoon. It was very foggy and the grass was wet.

Aug 18 Same location

Have continued to see frogs in dry places. At least 2 were on dry sand above a 5 ft bank and 10 or 15 ft. away from Maple Creek.

Murray
1949

Sceloporus occidentalis

Aug 20 French Camp 3100 Ft., Humboldt Co., Calif.

In area of Douglas fir and incense cedar forest. Find the scelops in more open areas. Walked up road to NE of camp and found a number of them where there was a bush covering of chinquapin, tan oak and manzanita, with bracken ferns at the base. Sunned on the bank of road but rushed off with a clatter of leaves usually before I could even see them. Hid in mats of dried bracken fern leaves, usually entering immediately - particularly timid. Area dry. Several were around an abandoned house, living in crevices, under boards, etc. Caught 1.

Aug. 22 Schoolhouse Peak, 2900 ± ft., Humboldt Co., Calif.

Spent morning on grassy hillside with several rocky outcroppings. Found a few out sunning on the rocks, but not numerous. None on fences, boards etc. There were a few more in gullies with oaks, poison oak and some rocks. Area very dry. Collected 1.

Sept 3 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Do not find too common around the camp. Most are on exposed banks where there are madrone and ^{black oak} poison oak. They do not spend as much time on logs, tree trunks etc. as I would expect. Today was up on Campbell Ridge in mainly black oak and some

Murray
1949

Sceloporus occidentalis

Sept 3 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.
fir, south facing, rocky. Found scelops
quite numerous here. By the Trinity

Murray
1949

Gerrhonotus coeruleus

Aug 22 French Camp, 3100 ft., Humboldt Co., Calif.

700 Not at all sure of species. Found on south facing slope in open area with a rather sparse growth of grass and bracken fern. Several feet away from Douglas fir timber. In evening after sun had gone over ridge, though not yet dusk.

Aug 23 Same location

701 Just across from camp in about same habitat as above but in that part just thin grass. 10:30 AM. Sun was shining but not really warm air temp. yet. Ducked into gopher hole.

Aug 24 Same location

705 On North facing slope in a burned area. Many logs, bark, some dried grass. Brush tan oak scattered around with some dead leaves.

Aug 26 3 mi N Willow Creek, 200 ft., Humboldt Co., Calif.

Under a rotted fir log found 2 - a few feet from Coon Creek, slightly grassy with dry sandy soil. Underside of log quite moist. Well shaded area by maples. A short distance away found another out on the surface. Early evening before dusk.

Sept 3 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

Caught 1 along Horse Sinto Creek in a patch of green grass, shaded by alders. Just before dusk, sun had set.

Murray
1949

2

Gerrhonotus coeruleus

Sept 3 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

All have seen quite a few now, almost all in late afternoon between 4 and 5 and sometimes later. Usually before dusk begins. Active in grass or open places among shrubs and blackberry or raspberry patches. Usually have been along streams or the moister growth nearby.

Sept 7 Red Mt., 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

Caught 1 in a mouse trap in scrubby willows of a dry stream bed. Two or three Ponderosa pines and cedars scattered nearby. Intermediate between slope of Ceanothus cordulatus and thin pine and white fir forest.

Murray
1949

Eumeces skiltonianus

4 mi NNE

Aug 20 French Camp, 3000 ft., Humboldt Co., Calif.

Caught 1 small blue tail which darted under a mass of dried bracken fern leaves. Very dry slope of brush, mostly chinquapin, tan oak, manzanita. Low growth of bracken fern. Edge of an old road. Bright, warm sun at 11:30 AM. lizard very active and agile.

Aug 22 Schoonhouse Peak, 2900 ft., Humboldt Co., Calif.

Went down to this area in morning from French Camp. Rolling grassy hillside pasture, grazed by sheep but not heavily. Grass very dry and 4 to 6" high. There were several rocky outcroppings and scattered loose rocks. One was about 10 ft high and 40 x 20 ft, well weathered with many cracks and exfoliations. At 9:30 saw a skink slip across about 2 ft. of one side and into a crack - moved rapidly. At first was still at surface, then went back deeper. Caught it. Was bright and sunny but had not been really warm for more than 1 hour. Many ground squirrels in the area.

Looked further and saw a baby blue tail run several feet ^{in grass} under a rock. There was a very small outcropping here. Next to several garry oaks. This was at 10:45. In the course of the morning turned probably 200 loose rocks, both scattered and around



Murray
1949

2

Eumeces skiltonianus

Aug 22 Schoolhouse Peak, 2900+ ft., Humboldt Co., Calif.
outcroppings. Found only a pile of shed
skin fragments under one.

Aug 25 1 mi S Coyote Bay, Humboldt Co., Calif.

Cogswell saw one active at 1:00 PM in broken
Garry oak woodland. Mostly dead leaves, with
a few scattered rocks. In the open on a bright
warm afternoon.

Aug 26 2 mi N Hoopa, Humboldt Co., Calif.

At 1:30 P.M. saw a small blue tail
dart off of road into bushy growth. Bright
hot day.

Sept 1 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

Saw a fairly large individual run across
the road about 40 ft. ahead of me. Dry south-
west facing slope, mostly black oak with
some Douglas fir and madrone. A little
parched poison oak and very dry leaf litter.
A very hot bright sun was beating down.
At that point it was somewhat broken by
the trees. The skink ran back again when
I disturbed the leaf litter in which it was
hiding. 1:30 PM

Slightly farther on saw a small blue
tail run across about 30 ft. ahead, again
into a small patch of leaves at the base
of a bank. Chased it through several little
hiding spaces. Each time it wriggled violently

Murray
1949

3

Eumeces skiltonianus

Sept 1 3 mi N Willow Creek, 700 ft., Humboldt Co., Calif.

in a typical aimless escape reaction

On the way back saw a fair sized one on a log just downhill from the road in broken sunlight. Much ~~dry~~ leaf litter with oaks.

Immediately slipped away and out of sight. 2:30 PM

Another blue tail was on the upper bank side of the road in leaf litter. Tried to run up the steep bank and hid in a crevice. Chased it out and it tried various hiding places. Very active. 2:45 P.M. In sun.

Sept 2 4½ mi N, 1½ mi E Willow Creek, Humboldt Co., Calif.

Dr. Leopold saw one on the Horse Linto Creek trail, 3:30. Dry; ~~first~~ with some brush + rocks. Broken sunlight, hot day

Sept 10 Red Mt., 5300 ft., Trinity Co., Calif.

Copwell has seen one here. Bare rocky hillside.

Murray
1949

Thamnophis ^{ordinatus.} ~~sirtalis~~ infernalis

Aug 10 Big Sagoon, Humboldt Co., Calif.

Found one on a grassy hillock (622) about 20 feet from a small marshy patch with a bit of standing water. Area is mixed alder and spruce woodland, with a great deal of dense salmonberry, blackberry, thimbleberry thicket. Weather cloudy, but the sun was warm at the time. In the afternoon found another one 30 feet from the same marshy place, again in dry spot but green thick grass - at the edge of dense alder forest with much salmonberry. Sun was out briefly.

Aug 11 Same location

Dr. Pearson brought in 2. (my cat.). Reports both were in grass about 100 feet from a marsh.

Aug 17 Same location

Found 1 in spruce and alder forest next to camp, in a path. Densely shaded, partially grassy. The day was warm and sunny. Today had the first snakes I have seen in the deep woods at all. A small one in redwoods probably was also this species.

Sept 1 Willow Creek, 500 ft., Humboldt Co., Calif.

Deep woods of mixed maple, Douglas fir. Not far from small stream. Very young.

Murray
1949

Thamnophis elegans

Aug 8 Big Lagoon, Humboldt Co., Calif.

Dr. Miller found a small one in the dense dry grass before we pitched camp.

Aug 18 Same location

These have proven quite common in the dryer parts. By far the most numerous in thick stands of thistle in open pasture or along the edge of woods. Also appear at the edge of salmonberry, thimbleberry, and particularly blackberry. Have found them out sunning at the edge of cover when the sun was out or shining warmly through fairly thin clouds. Saw none when at all foggy or cold.

Aug 25 Coyote Peak, 3100 ft., Humboldt Co., Calif.

Found a young one in shade under dense fir and maple growth, but at edge. Within 100 yards of a spring and pool. Fairly moist surroundings with green herbaceous growth.

Aug 26 2 mi W Martins Ferry, Humboldt Co., Calif.

Found one along the road as we descended down the mountain to the Klamath River.

Along growth of bracken fern at edge of Douglas fir, tan oak, chinquapin and Garry oak.

Murray
1999

2

Thamnophis elegans

Sept 2 4½ mi N, 1½ mi E Willow Creek, Humboldt Co., Calif.

Found 1 near the edge of Horse Pinto Creek.
Dry sandy ground among rocks, and at the
edge of grass and berry vines.

Sept 3 Same location

Found another of same form (aquatic)
along small flow in the bed of Horse Pinto
Creek. Active in late afternoon. Later lost
specimen.

Sept 9 Red Mt, 5300 ft., 14 mi S Hayfork, Trinity Co., Calif.

One active in the afternoon on the ridge.
In *Ceanothus cordulatus* with much space between
plants

Murray
1949

Diadophis amabilis

Sept. 1 2 mi N Willow Creek, Humboldt Co., Calif.

Found in the road at 2.P.M. Flat at the base of dry southwest facing hillside. On both sides there were many black oaks with some Douglas fir. That part well shaded. Dry leaf litter under the trees with little undergrowth. Weather hot with a brilliant sun.

Sept 2 4 1/2 mi N, 1 1/2 mi E Willow Creek, 800 ft., Humboldt Co., Calif.

I was out among the rocks at the edge of Horse Sinto Creek. Adjoining were blackberry thickets with dry grass. Shaded partially by tall alders. Late afternoon, about 4:30 and sun was behind ridge. Weather bright and quite hot, though less so by the creek.

